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ESTIMATING THE NUMBER AND DURATION OF COGNITIVE PROCESSES USING THE WITHIN-TASK SUBTRACTIVE METHOD

By

Dr. Gregory M. Corso, Ph.D.
Michael J. Patterson, M.S.

Prepared for

USAF Office of Scientific Research/NL
Bolling Air Force Base, DC 20332

Under

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June 1984

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A UNIT OF THE UNIVERSITY SYSTEM OF GEORGIA
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June 1984

ESTIMATING THE NUMBER AND DURATION OF COGNITIVE PROCESSES USING THE WITHIN-TASK SUBTRACTIVE METHOD

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The research described in this report was directed towards developing a methodology for partitioning choice-reaction time into component parts. This methodology involved the use of a modified Sternberg task in which the subjects viewed two horizontally presented letters and were required to classify each of the letters into either the positive or negative set. The classification procedure was performed by depressing two response keys on the same trial. Latency measures were obtained for the elapsed time between stimulus onset and the first response and between the first response and the second response.

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Input and output times were then derived. In addition, three different types of interruption stimuli (auditory, visual and auditory-visual) were presented at various times prior to and after the onset of the classification stimulus. Input and output latencies were differentially influenced by the different types of interruption stimuli and by the onset time of those interruption stimuli. Further areas of research are also presented.

ESTIMATING THE NUMBER AND DURATION OF COGNITIVE PROCESSES USING THE WITHIN-TASK SUBTRACTIVE METHOD

Dr. Gregory M. Corso, Ph.D.

Michael J. Patterson, M. S.

Abstract

The research described in this report was directed towards developing a methodology for partitioning choice reaction-time into component parts. This methodology involved the use of a modified Sternberg task in which the subjects viewed two horizontally presented letters and were required to classify each of the letters into either the positive or negative set. The classification procedure was performed by depressing two reqponse keys on the same trial. Latency measures were obtained for the elapsed time between stimulus onset and the first response and between the first response and the second response. Input and output times were then derived. In addition, three different types of interruption stimuli (auditory, visual and auditory-visual) were presented at various times prior to and after the onset of the classification stimulus. Input and output latencies were differentially influenced by the different types of interruption stimuli and by the onset time of those interruption stimuli. Further areas of research are also presented.

PREFACE

We wish to express our appreciation to Jeff Gerth and Dennis Folds for their assistance in this research project. We are grateful as well to Bill Engleman, Robert Patterson and Amye Warren-Leubecker for assistance in data collection. We would also like to acknowledge AFAMRL/HEC, Wright-Patterson AFB for their help in the initial stages of this investigation.

Introduction

In command, control and communication systems, questions dealing with the optimization of human abilities and capabilities are being raised so that system performance can be optimized. While questions are being raised, the methodologies currently utilized have a tendency to view the human operator in those systems as an indivisable subsystem. Indeed, while one can measure the performance of various machine components within a subsystem, the human operator is a subsystem whose component parts are not measured. Only overall human performance is measured and reported. However, those overall human performance measures are in fact confounded and compounded by the totality of cognitive processes that precede the final output. The research outlined on the following pages is directed towards an investigation concerned with the partitioning of human latency performance into component parts. This partitioning procedure will allow for estimates of various subprocesses involved in human latency performance, and will therefore provide better estimates of individual subprocess performance.

Attempts to partition human latency and to use those component latencies as measures of cognitive processes are not new to psychology. Patchella (1974) has identified two such approaches: (1) the additive factor approach; (2) the subtractive approach. The additive factor approach (Sternberg, 1966; 1969) uses a regression technique to assess relative changes in the duration of mental processes. Using a task specifically designed to test this approach, subjects were required to remember a small number of items (the positive set). A probe item was then presented to which the subjects were required to respond with either a "yes", if it was one of the items that was in the positive set, or "no", if it was not one of the items in the positive set.

The general model resulting from this approach suggested a four-stage serial processing system (Smith, 1968). Using a regression notion, the model may be reduced to the following equation:

$$RT = A + M(X) \qquad (1)$$

where A represents the time associated with the processing involved with stimulus encoding, response selection and response execution; while M represents the processing time per item, or central processing time per item (Briggs & Blaha, 1969; Swanson & Briggs, 1969; Briggs & Swanson, 1970); and X represents the number of items to be searched through in memory (the positive set). In a binary classification task with additional factors, those factors that influence A are assumed to act on the encoding processes, since response selection and response execution are held constant. This would be demonstrated by a change in the intercept of the function relating reaction time to memory set size. On the other hand, factors influencing central processing would alter the slope of that function.

While that approach has provided information concerning the rate of processing, it does not provide a method for separating the duration involved in each stage of processing. Moreover, the number of stages involved in processing are determined by the number of significant main effects. Consequently, if a particular experimental design results in 27 main effects, one is forced to accept 27 stages of processing.

The second approach to the partitioning of human latency has been termed the subtractive approach. Actually this approach is not one, but two similar approaches: The between-task approach, and the within-task approach (Corso, 1982). In both approaches the procedure that is used is

to subtract one latency from another latency. For the between-task approach, two different tasks are selected, where one task involves an additional mental process that is lacking from the other task. The differences between the latencies resulting from each task can then be used as an estimate of the duration of that particular mental process investigation. The major problem associated with this procedure, however, is determining whether one task, in fact, does not require the mental process under investigation.

The within-task subtractive approach (Teichner, 1979; Corso, 1982) appears to avoid this problem. The procedure involves the presentation of a matrix of stimuli, where each stimulus must be identified by separate and sequential responses. Using this procedure, the latency from the onset of the matrix to the performance of the first response is always longer than the latencies between any of the remaining sequential responses. Teichner (1979) suggested that the longer first response latency is the result of additional processes that are missing from the remaining response latencies. Specifically, because the matrix is not physically available for processing all response latencies after the first response do not reflect all the processes required to encode and store (input) information into memory. That is, the latencies associated with these responses only reflect output processes. Likewise, the first response latency reflects not only output processes but also input processes. Separate times can then be derived for the input processes in addition to the output processes by subtracting the mean of the latencies associated with each sequential response (performed after the first response) from the first response latency. The major problem associated with this

procedure is that the input processes may be operating in parallel with the output processes. This would result in either an overestimation of the input processes or an underestimation of the output processes.

Because of the ability of the within-task subtractive method to partially separate the input processes from the output processes, and thereby provide performance measures for the two subprocesses within the human subsystem, the present investigation used this methodology as a starting point. The matrix consisted of two horizontally arranged letters which required two sequental responses. The task of the subject was to classify each of the letters into either a positive set or a negative set, as in the traditional Sternberg binary classification task. This procedure permits the separation of input and output latencies for both response types. Additionally, an attempt was made to identify the number and duration of additional subprocesses within the input and output stages as identified by the within-task subtractive method.

In a previous study (Corso, 1982) an auditory stimulus presented after the onset of a visual stimulus interrupted the processing of the visual stimulus. This finding suggested that through the manipulation of the onset time of the auditory stimulus relative to the onset of the visual stimulus the time course of the substages of processing could be determined. Moreover, since the effects of the interrupting stimulus may be modality specific, and since the visual matrix may be processed as a visual and/or auditory representation different types of interrupting stimuli were presented to clarify some of the issues regarding the nature of processing.

Method

Subjects

Forty right-handed male undergraduate students volunteered to participate in exchange for class credit and a $25.00 bonus for best within group performance. The subjects were assigned to one of four interrupting stimulus groups, each containing ten subjects. All subjects had normal hearing and visual acuity as determined by responses to a test tone (1000 hz) and a standard Snellen chart. Each subject participated in ten one-hour daily sessions that were held within a two week period.

Apparatus

A Cromemco micro-computer interfaced with a Colbourn Psychoacoustics package, a visual interruption light (two 28 volt light bulbs) and an Ektagraphic slide projector presented the visual matrix and all interrupting stimuli. The presentation time for the visual matrix was 90 ms, with an average luminance of 48 FL. The presentation time for each interruption stimulus was 100 ms. Three different interruption stimuli were used; an auditory interruption stimulus, a visual interruption stimulus and a combined auditory and visual interruption stimulus. The auditory stimulus was a 1000 hz pure tone dichotically presented with an intensity of 90 dBA. The visual stimulus consisted of a circular light flash, approximately 10 cm in diameter centered tangentially above the search field, at one-half the test field brightness. Subjects responded to the test stimuli by depressing a specific combination of two telegraph keys, dependent on the test condition.

Subjects were seated approximately 95 cm from the projection screen in a sound-deadened chamber. The interior of the chamber was illuminated at a low ambient level. The two response keys were attached to a standard

laboratory table at which the subject was seated. The matrix stimuli slides were presented at the subject's eye level with each item being approximately 1.5 cm by 1.5 cm in size, centered in a search field 28 cm by 44 cm.

Procedure

The general procedure employed was the measurement of performance on a Sternberg-type binary classification task as a function of the onset time of the interruption stimulus. The dependent measures were percent correct and response latency. The four groups formed were based on the type of interruption stimulus experienced (no interruption, visual interruption only, auditory interruption only, visual and auditory interruption).

In line with the Sternberg binary classification task, a memory set of size two was presented to each subject. Two alternative memory sets were used, memory set one used the letters O and Z, with the other memory set containing the letters Y and G. On each day of testing each subject received 480 trials, 240 trials followed by a three minute rest period followed by another 240 trials. For each of the 480 trials the subject was presented with a slide containing two horizontally arranged letters. These two letters were the stimuli to be classified. If both of the letters were from the memory set then the positive set key was to be depressed twice, if neither of the letters were from the memory set then the negative set key was to be depressed twice, if one letter was from the memory set and one letter was not from the memory set then both keys were depressed once in succession. The type of response (positive, negative) assigned to each key was counterbalanced across subjects.

A total of 480 slides containing 160 positive set slides (two memory set items), 160 negative set slides (no memory set items) and 160 mixed

slide sets (one memory set item, one non-memory set item) were presented within one daily session. For each of the 160 slide types the interruption stimulus, if it did occur, assumed onset time values from 500 ms before to 1090 ms after the onset of the slide. This period was divided into 10 ms increments resulting in a total of 160 possible initiation points for the onset of the interruption stimulus relative to the onset of the slide. Consequently, within one daily session each slide appeared with each interruption stimulus onset time once. Across the ten sessions, each slide appeared with each interruption stimulus onset ten times. Each slide by interruption stimulus onset time was randomized once so that one 480 trial sequence could be generated. This sequence was reversed so that one additional 480 trial sequence was also generated. These two sequences were used across the ten sessions in such a manner that each sequence was used five times and such that each of the ten subjects in each group received a different ordering. However, across the four groups subjects were matched for sequence orders.

Experimental Design

The independent variables were interruption stimulus onset times and type of interruption stimulus. The interruption stimulus onset time was a within-subject variable and assumed 160 values. The type of interruption stimulus was a between-subject variable. The dependent variables were percent correct, first response latency and second response latency. Derived input latencies were obtained by subtracting second response latency from first response latencies.

Results

For all subjects, percent correct and median first and second response latencies were calculated across the ten daily sessions for each interruption stimulus onset time. An inspection of these data showed that some values of the onset time were missing and that some subjects, one per group, violated the sampling restraints. The following sections present the analysis of the dependent variables based on a sample size of nine subjects per group.

Percent Correct

The percent correct scores for each subject within the four groups was subjected to a split-plot factorial analysis of variance. No within or between group differences were observed.

Latency

Six different analyses of variance were performed on the latency data. These analyses were broken down into the type of response, both positive, both negative, and one positive and one negative, as well as the nature of the latency, input times and output times. All analyses were performed on the correct responses, since accuracy was between 95 and 99 percent correct.

Positive set responses. The latencies for the correct positive set responses were subjected to two split-plot analysis of variances. One analysis was performed on the latency associated with the time between key press one and key press two (output latencies). The other analysis was performed on the difference between slide onset and the first key press minus the output latency (input latencies).

The analysis of the output latencies revealed a significant effect for interruption stimulus onset time, $F(158,5056)=1.82$, $p. < .01$. While there were no significant main effects for type of interruption stimulus

a visual inspection of the output latency data for the four different groups, part of which is presented in Figure 1, shows a rather orderly arrangement of the four groups with the no interruption stimulus group being approximately 100 ms slower than the group where both types of interruption stimuli were presented. It must be noted that the standard deviations associated with the four different groups was also rather orderly with the no interruption stimulus group having the highest standard deviation and also being rather variable across the different onset time value. The group that received both types of interruption stimuli had a much smaller standard deviation with less variability across the onset time values. The other two groups fell between these two extremes as can be seen from the data presented in the Appendix. Further analyses of these data are planned.

The analyses of the input times associated with the correct positive set responses revealed a significant main effect for interruption onset time, $F(158,5056) = 16.11$, $p. < .01$, and a significant interaction between type of interruption stimulus and interruption stimulus onset time, $F(474,5056) = 1.43$, $p. < .01$. These data, parts of which are presented in Figure 1 with the remainder presented in the Appendix, show very little between group differences for interruption stimulus onset times between 500 ms to 10 ms prior to the onset of the classification stimulus. However, after 10 ms prior to the onset of the classification stimulus, differences between the groups appear and continue until the last onset time value. Additionally, the extent to which the groups differ appears to be a function of the type of interruption stimulus, the number of interruption stimuli and the onset time value at which the interruption stimlus occurs.

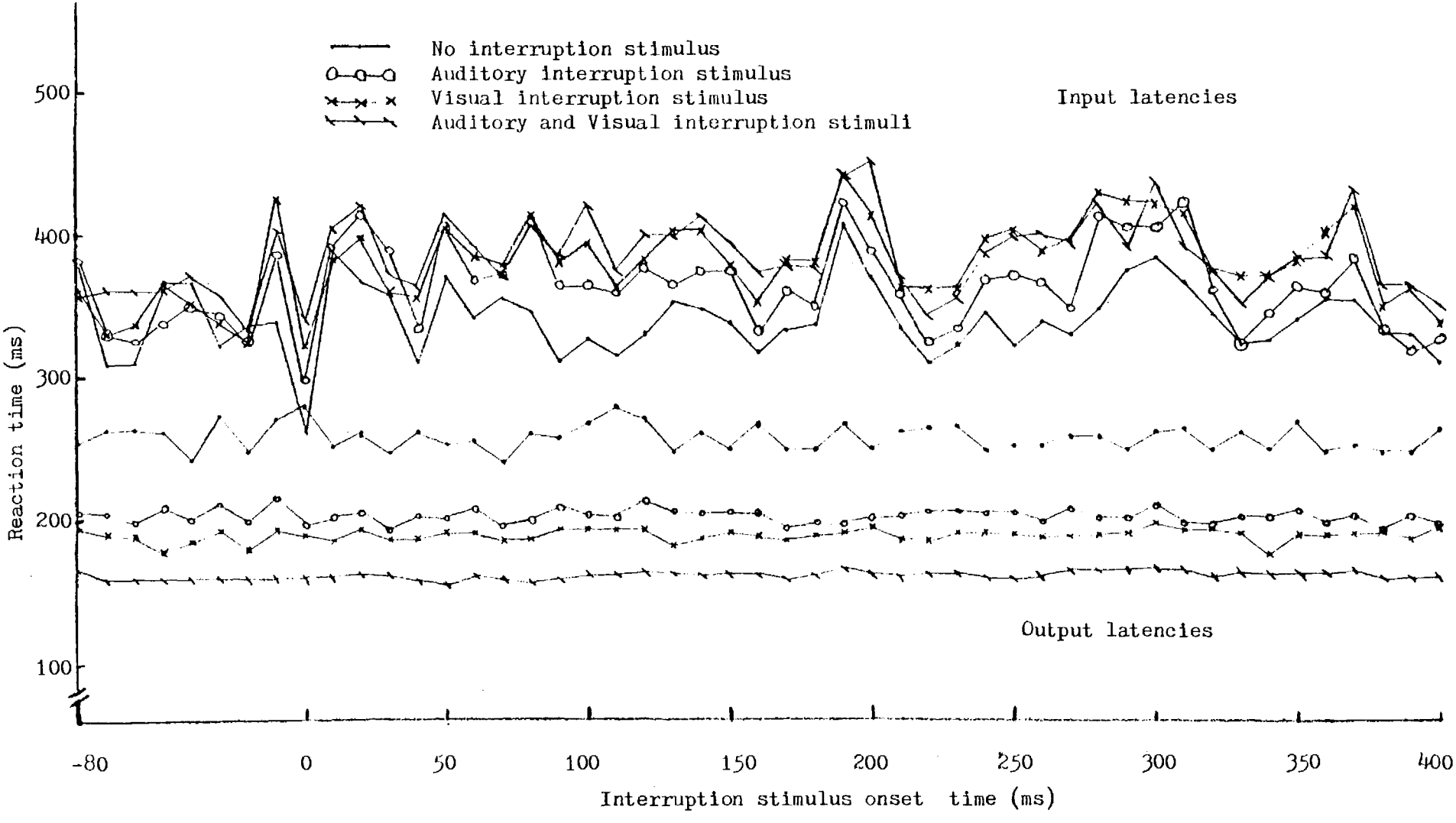

Figure 1. The correct positive set latencies as a function of interruption stimulus onset time.

Negative set responses. The latencies associated with the correct negative set responses were subjected to a split-plot analysis of variance. As with the positive set responses two analyses were performed, one on the output latencies and the other on the input latencies.

The analysis of the output latencies resulted in the same significant effect, interruption stimulus onset time, $F(156,4992) = 1.42$, $p. < .01$. The partial plot of the data, presented in Figure 2, shows results similar to those found with the correct positive set stimuli, a rather regular ordering of the output latencies as a function of the type of interrupting stimulus and a slight decrease in the latencies as the interruption stimulus onset time increased. A visual inspection of the data presented in the Appendix shows a small and consistent standard deviation associated with the latencies for the condition where both interruption stimuli were presented relative to the condition where no interruption stimulus was presented.

The analysis of the input latencies for the correct negative set responses showed a significant main effect for interruption stimulus onset time, $F(156,4992) = 13.15$, $p. < .01$, and a significant interaction between the type of interruption stimulus and interruption stimulus onset time, $F(468,4992) = 1.22$, $p. < .01$. A partial plot of these data, presented in Figure 2, and a visual inspection of the data presented in the Appendix, suggests that interruption stimulus onset times from 500 ms upto 70 ms prior to the onset of the classification stimulus has little effect on the input latencies. Considerable variation occurs for interruption stimulus onset times from 70 ms prior to the onset of the classification stimulus to 390 ms after the onset of the classification stimulus.

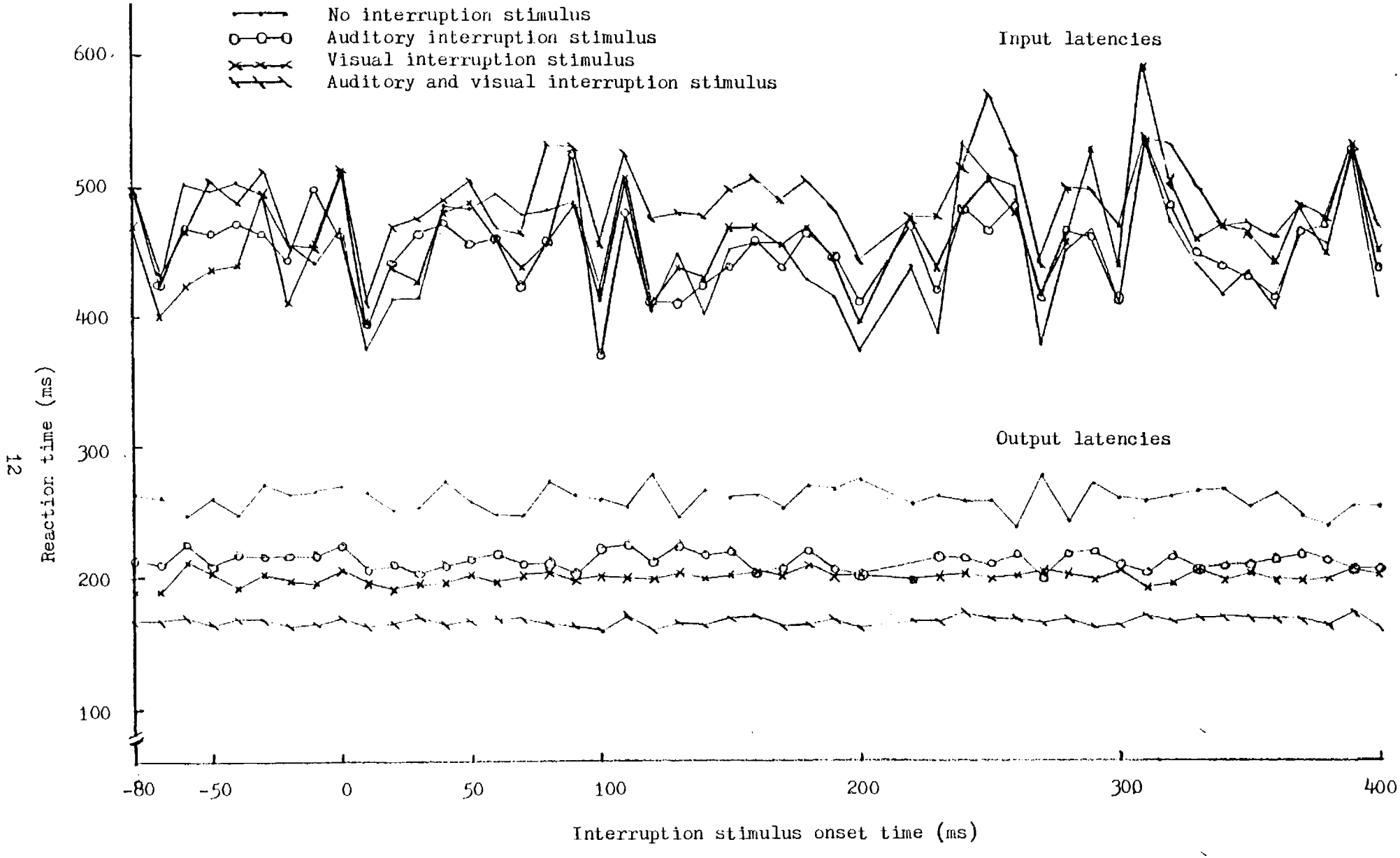

Figure 2. The correct negative set latencies as a function of interruption stimulus onset time.

Mixed set responses. The latencies associated with the correct mixed set responses were subjected to split-plot analyses of variance. As with the other response types, an analysis was performed on the output latencies and another analysis was performed on the input latencies.

The analysis of the output latencies showed a significant main effect for interruption stimulus onset time, $F(158,5056) = 2.28$, $p. < .01$. A partial plot of these data, presented in Figure 3, and a visual inspection of the data, presented in the Appendix, suggests that as interruption stimulus onset time increases a corresponding decrease in output latency occurs.

The analysis of the input latencies showed significant main and interaction effects. A significant main effect was obtained for interruption stimulus onset time, $F(157,5024) = 10.67$, $p. < .01$. A significant interaction between interruption stimulus onset time and the type of interruption stimulus occurred, $F(471, 5024) = 1.31$, $p. < .01$. A partial plot of these data, presented in Figure 3, and a visual inspection of the data, presented in the Appendix, show small between-group variation for onset times of 500 ms to 60 ms prior to the onset of the classification stimulus. For onset values from 60 ms prior,to 360 ms after the onset of the classification stimulus, with some exceptions, rather orderly between-group differences occur.

Between response-type analyses. Due to limits in computing facilitites no between-response type analyses were performed. However, visual inspection of the data points out some interesting observations. First, the output latencies between the groups for the correct positive response ranges between 260 ms, for the no interruption stimulus group, and 160 ms for the group

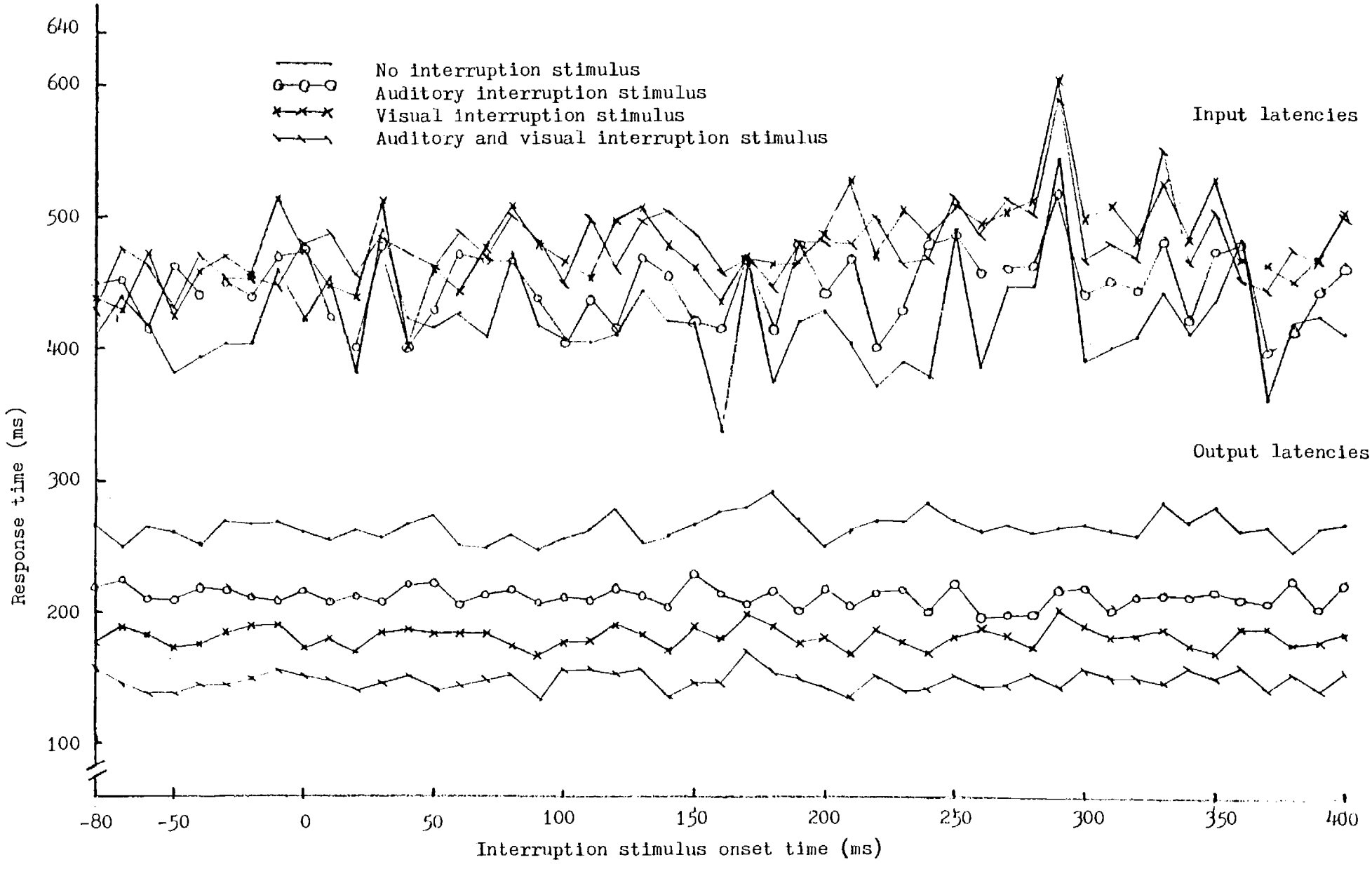

Figure 3. The correct mixed response latencies as a function of interruption stimulus onset time.

receiving both types of interruption stimuli, a difference of 100 ms. A similar 100 ms difference also occurs for the correct negative set responses. However, for the mixed response type the difference is on the order of 120 ms.

Second, the input latencies associated with each type of correct response appear to vary as a function of response type. The correct positive set responses fall within the 300-400 ms range, while the correct negative set responses and the mixed set responses fall within the 400-500 ms range. This difference, in general appears to hold throughout the interruption stimulus onset time range.

Third, there appears to be an interaction between input and output latencies and the type of interruption stimulus. For the output latencies, the slowest latencies are associated with the no interruption stimulus condition, while the fastest latencies are associated with the condition where both types of interruption stimuli are presented. However, for the input latencies, the slowest latencies are associated with the condition where both interruption stimuli are presented, while the fastest latencies are associated with the no interruption stimulus condition.

Fourth, depending on the type of response, positive, negative, or mixed, there appears to be different onset time values where a significant separation of the input latencies for each type of interruption stimulus occurs. For example, from Figure 1, at 50 ms a departure of the no interruption stimulus condition from the other three conditions occurs. However, a different type of separation for the negative set responses appears to occur at 120 ms, as can be seen from Figure 2. In addition, this departure appears to in volve the condition where both types of

interruption stimulus deviates from the no interruption stimulus condition, the visual interruption stimulus condition and the auditory interruption stimulus condition.

Discussion

These results, in general, appear to be supportive of the original ideas presented in the earlier sections of this report. The use of the interruption stimulus procedure within the modified Sternberg classification task appears to be able to identify processing stages and their durations. From Figure 1, the interruption stimulus onset interval of 50 to 150 ms after the onset of the classification stimulus suggests a processing stage, as does the interval from 240 to 320 ms. In addition, since the visual interruption stimulus condition, for the most part, follows the condition where both interruption stimuli were presented, it would appear that this type of processing is visual in nature. However, more research using this methodology is needed.

It is also interesting to speculate on the reasons for the apparent shift in the input latencies associated with response type. Sternberg and Briggs have both suggested that the negative set information is processed after the positive set information, this shift is also apparent using this methodology. As was stated earlier, positive set input latencies fall within the 300-400 ms range, while negative set input latencies fall within the 400-500 ms range, a difference of 100 ms. This would suggest that processing of positive set information is completed after 100 ms. Further support for this notion comes from Figure 1. For the 100 ms interruption stimulus onset value in Figure 1, there is a large separation of the input latencies between the no interruption stimulus condition and the other three

types of interruption stimuli. This deviation appears to suggest that some type of processing is occurring at this point. Additional support is also provided from Figure 2, the correct negative set input latencies, for the 100 ms to 200 ms interruption stimulus onset times. For this interval a separation of the input latencies occurs. This would suggest some type of processing, probably negative set information. However, one has to question why the separation involves only the condition where both interruption stimuli were presented from the other three conditions. No reason can be offerred at this time.

It would appear that, in general, the introduction of an interruption stimulus hinders the input of information into memory. This is obvious from the increase in latencies associated with the use of the interruption stimulus versus the no interruption stimulus condition. However, for the output of information from memory, the interruption stimulus facilitates this process, as evidenced from the decrease in latency for those groups that received the interruption stimulus versus the group that did not receive the interruption stimulus. This would suggest that the use of an interruption stimulus provides some type of bench-mark to respond. In deed, the standard deviations associated with the output conditions would seem to support that nction, with very small standard deviations associated with the condition where both interruption stimuli were presented compared to the large standard deviations associated with the no interruption stimulus condition.

It must be pointed out, however, that while 400 hr of subject data, and 48000 data points per group were collected, the variablility inherent in these data are obvious. In addition to increasing the sample size,

a reduction in the number of interruption stimulus onset time values is warranted. Interruption time values of 100 ms prior to the onset of the classification stimulus to 400 ms after the onset of the classification stimulus would increase the number of number of data points for each interruption time value, and at the same time it would reduce the overall session length. This increase in interruption stimulus onset time values should reduce the varability.

In terms of additional research, it would appear that an increase in positive set size should increase the input latencies, but not the output latencies. Additionally, increasing the positive set size should increase the range of 50 to 150 ms observed in Figure 1. If processing is serial in nature, then as positive set size increases a corresponding increase in that interval should be observed.

Additional research should be conducted on the effects of altering the parameters of the interruption stimuli. Increases in interruption stimuli intersity, duration, for the visual stimuli its color, for the auditory stimuli its pitch and complexity should have an influence on the input latencies.

References

Briggs, G.E. & Blaha, J. Memory retrieval and central comparison times in information processing. Journal of Experimental Psychology, 1969, 79, 395-402.

Briggs, G.E. & Swanson, J.M. Encoding, decoding and central functions in choice reactions. Journal of Experimental Psychology, 1970, 86, 296-308.

Corso, G.M. Binary classification and the subtractive method. (AFOSR TR Contract #F49620-82-C-0035) AFAMRL/HEC, 1982.

Donders. F.C. Over de snekheid van psychische processen. Onderzoekinggen gedann in het Physiologisch Laboratorium der Utrechsche Hoogeschool. Tweede Reeks, 1868-1869, 2, 92-120. (Transl. by W.G. Koster, Acta Psychologica, 1969, 30, 412-431).

Patchella, R.G. The interpretation of reaction time in information-processing research. In B. Kantowitz (Ed.) Human Information Processing: Tutorials in Performance and Cognition. Hillsdale, N.J.: Lawrence Erlbaum Associates, 1974.

Smith, E.E. Choice reaction time: An analysis on the major theoretical positions. Psychological Bulletin, 1968, 69, 77-110.

Sternberg, S. High-speed scanning in human memory. Science, 1966, 153, 652-654.

Sternberg, S. The discovery of processing stages: Extension of Donders' method. Acta Psychologica, 1969, 30, 276-315.

Swanson, J.M. & Briggs, G.E. Information processing as a function of speed versus accuracy. Journal of Experimental Psychology, 1969, 81, 223-229.

Teichner, W.H. Temporal measurements of input and output processes in short/term memory. Journal of General Psychology, 1979, 101, 279-305.

Appendix

The following pages present the means and standard deviations for the three different response types, correct positive, correct negative and correct mixed. Each of these types of responses are further divided into input and output latencies.

MEAN INPUT LATENCIES FOR THE CORRECT POSITIVE RESPONSES

GROUP = NONE			VISUAL	AUDITORY	MARGINAL AUDITORY & VISUAL
INTERRUPTION STIMULUS ONSET TIMES					
-500	1	357.72222	341.61111	335.27778	364.16667	349.69444
-490	2	342.94444	366.77778	372.77778	361.16667	360.91667
-480	3	312.66667	321.27778	311.88889	344.38889	322.55556
-470	4	339.94444	337.22222	356.16667	363.00000	349.08333
-460	5	288.72222	302.72222	325.11111	333.72222	312.56944
-450	6	368.33333	383.72222	342.22222	373.33333	366.90278
-440	7	364.55556	367.66667	397.66667	369.16667	374.76389
-430	8	323.05556	318.38889	345.11111	365.83333	338.09722
-420	9	348.05556	362.55556	369.72222	369.61111	362.48611
-410	10	341.88889	357.05556	368.05556	360.83333	356.95833
-400	11	391.83333	370.94444	387.22222	366.44444	379.11111
-390	12	339.83333	348.94444	345.16667	356.44444	347.59722
-380	13	374.16667	367.83333	401.83333	379.88889	380.93056
-370	14	323.05556	322.61111	353.77778	333.77778	333.30556
-350	15	339.61111	330.55556	332.94444	347.44444	337.63889
-340	16	380.61111	381.83333	384.88889	383.94444	382.81944
-330	17	363.61111	368.66667	383.11111	404.05556	379.86111
-320	18	343.88889	397.05556	398.11111	361.55556	375.15278
-310	19	357.27778	354.16667	341.00000	352.66667	351.27778
-300	20	368.22222	366.94444	378.66667	385.77778	374.90278
-290	21	340.88889	319.94444	332.94444	341.88889	333.91667
-280	22	381.88889	389.83333	386.11111	370.22222	382.01389
-270	23	336.05556	353.55556	353.16667	359.11111	350.47222
-260	24	361.33333	397.77778	374.11111	390.16667	380.84722
-250	25	348.11111	357.66667	379.88889	381.44444	366.77778
-240	26	390.55556	385.55556	398.55556	375.77778	387.61111
-230	27	321.72222	338.11111	322.55556	361.00000	335.84722
-220	28	329.50000	309.16667	322.55556	321.16667	320.59722
-210	29	314.83333	330.11111	352.22222	351.05556	337.05556
-200	30	314.66667	340.05556	314.66667	362.88889	333.06944
-190	31	338.77778	328.94444	352.27778	352.61111	343.15278
-180	32	344.16667	314.94444	330.44444	326.38889	328.98611
-170	33	339.22222	346.44444	336.00000	343.44444	341.27778
-160	34	399.94444	416.61111	423.55556	423.38889	415.87500
-150	35	512.11111	397.38889	457.72222	449.94444	454.29167
-140	36	325.38889	330.94444	363.38889	331.22222	337.73611
-130	37	374.33333	358.27778	356.11111	364.38889	363.27778
-120	38	338.83333	341.11111	357.94444	345.72222	345.90278
-110	39	350.55556	396.72222	397.50000	390.77778	383.88889
-100	40	320.61111	338.11111	333.50000	335.05556	331.81944
-90	41	376.38889	385.33333	376.11111	382.50000	380.08333
-80	42	378.11111	362.16667	382.38889	359.72222	370.59722
-70	43	309.22222	331.66667	330.11111	361.11111	333.02778
-60	44	310.44444	337.27778	325.83333	360.11111	333.41667
-50	45	367.38889	366.72222	338.38889	361.27778	358.44444
-40	46	365.44444	352.38889	356.88889	371.33333	361.51389
-30	47	322.38889	338.50000	343.88889	358.16667	340.73611
-20	48	336.83333	324.00000	322.61111	334.16667	329.40278
-10	49	339.44444	424.11111	386.16667	402.27778	388.00000
0	50	293.38889	323.50000	299.55556	340.83333	311.81944
10	51	388.72222	391.88889	391.44444	403.16667	391.30556
20	52	367.50000	398.77778	413.72222	420.61111	400.15278
30	53	359.05556	359.72222	389.22222	373.88889	370.47222
40	54	313.72222	355.55556	334.66667	362.05556	341.50000
50	55	371.06667	405.33333	403.44444	413.94444	398.59722
60	56	342.33333	384.05556	369.44444	391.22222	371.76389

70	57	356.66667	379.16667	372.83333	371.38889	370.01389
80	58	346.16667	414.38889	409.33333	406.16667	394.01389
90	59	313.83333	381.00000	364.55556	385.27778	361.16667
100	60	327.33333	394.05556	364.66667	420.94444	376.75000
110	61	316.00000	363.83333	359.16667	374.33333	353.33333
120	62	332.55556	382.83333	377.22222	400.11111	373.18056
130	63	352.83333	402.16667	365.16667	398.77778	379.73611
140	64	347.94444	403.11111	375.11111	412.11111	384.56944
150	65	339.38889	377.38889	375.22222	395.38889	371.84722
160	66	318.55556	352.55556	333.22222	373.83333	344.54167
170	67	334.38889	381.05556	360.50000	380.61111	364.13889
180	68	337.55556	380.72222	351.22222	377.27778	361.69444
190	69	406.38889	440.38889	421.16667	441.44444	427.34722
200	70	371.61111	412.33333	387.05556	434.66667	401.41667
210	71	335.72222	364.16667	358.27778	371.55556	357.43056
220	72	310.00000	362.22222	325.16667	342.50000	334.97222
230	73	323.11111	362.27778	335.61111	355.38889	344.09722
240	74	345.55556	396.83333	368.00000	386.88889	374.31944
250	75	326.22222	402.77778	371.44444	397.11111	374.38889
260	76	339.16667	388.11111	366.50000	400.00000	373.44444
270	77	331.16667	396.77778	347.83333	394.22222	367.50000
280	78	358.55556	429.72222	413.66667	420.00000	405.48611
290	79	375.44444	422.61111	403.00000	391.11111	398.04167
300	80	383.27778	420.16667	403.83333	436.61111	410.97222
310	81	366.88889	414.00000	421.22222	390.88889	398.25000
320	82	343.50000	374.11111	361.33333	375.11111	363.51389
330	83	323.27778	370.27778	322.27778	352.50000	342.08333
340	84	325.66667	369.50000	344.00000	369.38889	352.13889
350	85	340.27778	380.83333	363.61111	383.50000	367.05556
360	86	354.50000	399.44444	357.05556	384.61111	373.90278
370	87	353.77778	418.33333	381.88889	429.77778	395.94444
380	88	331.50000	348.72222	335.11111	364.50000	344.95833
390	89	330.61111	360.50000	318.50000	363.05556	343.16667
400	90	309.16667	346.55556	326.61111	349.00000	332.83333
410	91	345.27778	409.50000	359.16667	379.38889	373.33333
420	92	341.00000	393.72222	384.44444	389.50000	377.16667
430	93	360.72222	413.61111	367.72222	405.61111	386.91667
440	94	336.33333	391.00000	375.33333	359.38889	365.51389
450	95	385.83333	432.27778	371.11111	427.27778	404.12500
460	96	349.61111	402.72222	383.83333	404.83333	385.25000
470	97	333.00000	394.94444	392.50000	371.27778	372.93056
480	98	327.66667	338.33333	306.88889	372.50000	336.34722
490	99	327.16667	394.22222	357.55556	372.83333	362.94444
500	100	313.44444	367.72222	347.38889	398.27778	356.70833
510	101	390.11111	456.05556	459.88889	436.77778	435.70833
520	102	320.94444	358.16667	340.61111	367.94444	346.91667
530	103	331.05556	377.33333	330.50000	361.27778	350.04167
540	104	399.44444	422.44444	448.94444	435.38889	426.55556
550	105	306.00000	382.05556	362.05556	372.66667	356.19444
560	106	363.33333	405.33333	373.94444	392.72222	383.83333
570	107	361.55556	419.16667	407.33333	422.22222	402.56944
580	108	346.77778	410.88889	394.44444	413.44444	391.38889
590	109	344.66667	376.83333	370.88889	393.00000	371.34722
600	110	330.83333	383.83333	374.22222	371.44444	365.08333
610	111	344.11111	381.44444	378.00000	396.11111	374.91667
620	112	345.88889	393.88889	371.61111	386.00000	374.34722
630	113	400.77778	435.27778	432.22222	441.83333	427.52778
640	114	321.27778	372.55556	356.83333	382.38889	358.26389
650	115	366.16667	408.66667	397.88889	414.94444	396.91667
660	116	370.44444	435.72222	413.05556	426.00000	411.30556
670	117	339.72222	382.72222	357.44444	383.33333	365.80556
680	118	322.72222	403.66667	371.61111	381.38889	369.84722
690	119	349.44444	439.94444	411.83333	384.38889	396.40278
700	120	348.33333	396.61111	378.16667	399.11111	380.55556

710	121	280.88889	347.61111	317.77778	347.27778	323.38889
720	122	322.61111	383.61111	347.88889	383.22222	359.33333
730	123	342.00000	364.44444	368.55556	379.27778	363.56944
740	124	331.66667	383.05556	347.11111	384.94444	361.69444
750	125	336.94444	402.38889	382.27778	394.00000	378.90278
760	126	336.61111	372.11111	356.38889	385.16667	362.56944
770	127	372.27778	436.72222	422.27778	406.50000	409.44444
780	128	364.11111	455.66667	476.44444	426.33333	430.63889
790	129	320.83333	384.77778	354.55556	385.44444	361.40278
800	130	299.61111	369.11111	346.50000	343.50000	339.68056
810	131	318.44444	355.22222	345.94444	380.61111	350.05556
820	132	347.94444	422.38889	394.38889	418.38889	395.77778
830	133	343.77778	418.77778	395.16667	425.33333	395.76389
840	134	346.50000	381.83333	365.83333	393.72222	371.97222
850	135	356.88889	396.16667	386.33333	415.66667	388.76389
860	136	368.00000	411.22222	391.83333	404.83333	393.97222
870	137	362.66667	409.44444	395.22222	413.94444	395.31944
880	138	402.05556	407.44444	418.88889	440.66667	417.26389
890	139	314.22222	377.11111	348.22222	389.44444	357.25000
900	140	374.27778	412.11111	408.05556	420.72222	403.79167
910	141	370.88889	394.77778	410.61111	394.00000	392.56944
920	142	350.50000	391.00000	371.16667	407.05556	379.93056
930	143	347.88889	345.94444	339.22222	367.11111	350.04167
940	144	330.27778	375.16667	351.00000	379.77778	359.05556
950	145	367.22222	388.55556	377.44444	401.94444	383.79167
960	146	346.44444	402.22222	387.88889	394.22222	382.69444
970	147	386.11111	419.38889	406.00000	415.05556	406.63889
980	148	338.55556	430.38889	405.27778	419.38889	398.40278
990	149	358.33333	417.72222	368.22222	403.94444	387.05556
1000	150	391.00000	428.77778	445.66667	435.00000	425.11111
1010	151	369.72222	402.33333	391.88889	428.88889	398.20833
1020	152	330.05556	367.61111	342.44444	363.05556	350.79167
1030	153	345.83333	406.05556	393.00000	401.88889	386.69444
1040	154	333.00000	395.88889	357.61111	396.88889	370.84722
1050	155	373.72222	419.83333	399.27778	406.50000	399.83333
1060	156	336.61111	376.05556	363.88889	380.66667	364.30556
1070	157	338.61111	385.38889	341.05556	386.94444	363.00000
1080	158	369.38889	432.83889	407.50000	417.33333	406.77778
1090	159	345.33333	388.05556	365.83333	388.27778	371.87500
MARGINAL		347.11740	381.28127	370.14675	384.60098	370.78660
SUBJECTS		9	9	9	9	36

STANDARD DEVIATIONS FOR THE CORRECT POSITIVE INPUT LATENCIES

GROUP	•	NONE	VISUAL	AUDITORY	AUDITORY & VISUAL
INTERRUPTION STIMULUS ONSET TIMES					
-500	1	126.78799	121.99866	81.47435	83.46818
-490	2	125.88374	113.81018	108.79054	78.76309
-480	3	139.83897	107.52183	89.33007	69.90206
-470	4	142.88838	117.67410	104.94790	91.34071
-460	5	136.59958	88.16182	89.98569	79.56134
-450	6	124.51682	111.15870	105.10682	79.06919
-440	7	117.79045	111.79082	142.26538	85.25733
-430	8	134.54076	103.88268	89.24187	102.05421
-420	9	150.89658	135.36096	120.72492	75.16015
-410	10	137.22080	156.32887	101.36920	86.23333
-400	11	107.89491	122.09101	105.98028	91.66155
-390	12	137.15798	119.29230	108.28146	80.76062
-380	13	103.65327	129.60613	88.94872	90.26343
-370	14	114.52277	121.79614	82.45988	82.47655
-350	15	135.51840	136.38696	105.45184	75.86519
-340	16	125.25668	130.39076	115.97461	96.25859
-330	17	142.82699	128.67036	108.33218	106.24454
-320	18	147.34012	162.48970	129.52866	112.04755
-310	19	116.93564	122.30878	105.32925	74.88283
-300	20	114.87360	145.46100	76.80355	87.53860
-290	21	117.47893	101.25724	91.90465	64.15011
-280	22	118.74784	131.61188	103.38846	97.36886
-270	23	131.74489	137.66841	112.30260	82.12063
-260	24	137.21994	135.76407	84.24547	108.75517
-250	25	137.25473	130.58020	122.04578	83.42566
-240	26	90.94267	161.72265	93.18142	94.72695
-230	27	144.95346	115.03906	91.20973	104.06999
-220	28	116.94603	103.07461	77.85220	72.61543
-210	29	109.03984	120.98445	89.92431	77.37225
-200	30	122.56605	123.57726	92.86078	86.23289
-190	31	143.27336	98.80709	90.13362	62.43636
-180	32	116.13516	102.56810	96.94536	77.65701
-170	33	122.23213	125.00386	133.09959	96.94149
-160	34	112.69634	129.03967	105.83816	118.77441
-150	35	161.21003	115.08958	175.40045	86.15736
-140	36	129.22649	107.64190	130.37728	77.06941
-130	37	117.17268	130.31143	96.04321	81.44890
-120	38	121.03925	129.95330	89.10929	62.65586
-110	39	141.75407	113.27514	98.02965	86.10281
-100	40	139.10760	101.44789	104.81054	76.73756
-90	41	132.52164	122.12570	113.48011	100.74194
-80	42	101.40783	134.87031	117.88230	85.41996
-70	43	136.67459	116.36124	101.68603	71.70198
-60	44	125.16500	107.32697	85.66322	77.48418
-50	45	130.34085	112.68682	94.40166	63.85683
-40	46	82.97946	99.54106	74.31217	74.31310
-30	47	150.63813	103.57817	102.34830	77.76849
-20	48	123.30906	89.07020	88.78759	64.77606
-10	49	140.78073	184.03002	92.40265	84.69619
0	50	155.36123	100.34908	67.50159	72.40166
10	51	94.15715	106.69840	111.07752	91.81367
20	52	119.18814	140.64475	101.71962	76.79062
30	53	123.15652	127.98904	118.98270	79.92019
40	54	141.09131	105.49065	115.58790	71.71970
50	55	95.63906	145.93213	125.07609	100.20929
60	56	110.42730	134.46641	117.44292	90.20086
70	57	97.99968	106.11933	115.63223	79.72640

80	58	142.51106	138.00697	100.31513	77.16743
90	59	134.81909	113.94160	100.92152	76.36349
100	60	125.64931	127.37624	92.36510	85.51880
110	61	157.55852	107.26894	86.77557	91.05870
120	62	115.82137	115.98114	107.13867	82.61310
130	63	144.97327	143.07625	115.77807	53.12609
140	64	126.39013	109.09737	103.69811	72.46326
150	65	109.54245	105.55442	89.50772	64.00722
160	66	155.87905	99.05820	95.65894	82.70089
170	67	120.04655	97.77252	106.57040	63.77783
180	68	116.73245	137.60271	88.50957	76.98137
190	69	120.57253	115.10668	100.72208	64.03634
200	70	123.22484	131.18355	93.42793	96.22662
210	71	131.06227	112.39884	124.37798	75.73987
220	72	139.28097	104.22095	92.20358	78.95291
230	73	126.81034	103.66928	98.16370	64.27810
240	74	132.23640	107.66211	72.18293	63.75332
250	75	138.93931	132.51488	106.73256	88.89839
260	76	137.96535	130.91452	102.03461	95.81917
270	77	111.20701	126.47285	118.31156	87.01046
280	78	127.38020	122.48906	100.54818	82.75227
290	79	121.96399	141.48272	116.33142	88.45365
300	80	124.60788	133.01950	80.95562	93.27941
310	81	140.78791	110.16862	126.15643	104.31226
320	82	126.99951	133.89146	102.37431	79.25267
330	83	131.91548	125.90872	50.01382	79.02848
340	84	126.07042	128.90694	104.75418	71.73117
350	85	145.23690	144.38057	102.94318	115.02310
360	86	119.29087	143.02173	89.51203	81.65276
370	87	102.37404	153.10434	95.86637	101.19014
380	88	126.13980	126.32872	77.47813	109.73462
390	89	129.15852	118.98529	121.48560	75.57879
400	90	142.37912	120.41840	58.19836	83.66301
410	91	119.57558	155.17933	94.58131	63.70919
420	92	116.93374	119.12444	120.69912	64.65920
430	93	118.05695	115.51861	101.37773	81.22183
440	94	124.64073	158.56485	82.17854	83.01083
450	95	112.74751	110.35656	130.70907	91.05085
460	96	117.84147	160.66719	91.64163	85.11610
470	97	127.40511	110.16080	125.14492	81.10915
480	98	133.87751	105.32984	79.85173	86.83569
490	99	114.89805	141.05919	96.15237	69.62085
500	100	129.80862	95.27300	106.26582	100.52055
510	101	117.36982	110.20306	122.95471	73.33958
520	102	124.01498	93.24062	108.00109	71.88987
530	103	144.42590	146.08923	109.03153	77.89902
540	104	127.42558	124.56059	171.36336	70.44004
550	105	139.48673	141.73907	106.11210	104.88655
560	106	127.54337	120.27443	101.53400	81.30964
570	107	124.19603	102.74818	83.47754	88.17529
580	108	114.16959	114.37215	69.52627	120.32649
590	109	137.18350	103.10977	81.25530	88.71161
600	110	131.70801	137.03854	106.49358	84.02248
610	111	101.04633	113.01201	94.66553	91.08848
620	112	123.87337	120.68937	124.80955	80.91199
630	113	119.43463	122.25182	154.08360	105.07557
640	114	145.75496	103.91356	97.74201	80.21875
650	115	96.02897	132.51722	143.93266	103.90213
660	116	137.59348	110.65631	129.37360	88.98104
670	117	114.98345	118.12152	82.61713	98.92485
680	118	145.20505	155.75060	116.52971	82.93965
690	119	109.60595	145.70699	108.21275	93.92243
700	120	128.15323	113.14282	116.98558	78.62759
710	121	145.24952	108.46739	117.70437	72.25221

720	122	126.40604	126.46214	89.27688	79.88981
730	123	113.75659	133.11401	93.83777	85.01695
740	124	113.35646	122.20358	109.47682	91.84615
750	125	139.13403	146.54069	89.88643	84.99154
760	126	107.10882	105.19974	110.92052	75.59555
770	127	106.53582	131.26574	86.24678	97.32003
780	128	122.00276	130.95801	125.48293	92.67281
790	129	138.07358	122.83757	113.82125	80.59212
800	130	138.37851	109.71291	93.06281	86.88031
810	131	148.98310	92.77194	70.33156	72.18153
820	132	116.83039	122.21083	69.66203	97.70836
830	133	141.13449	127.55590	100.86191	97.58746
840	134	113.39670	125.68388	89.85961	85.05864
850	135	145.44818	111.86515	80.53299	85.71136
860	136	118.81640	138.26020	104.44317	80.99846
870	137	110.62210	121.77886	99.00887	106.83733
880	138	100.66343	127.18108	111.12177	90.64215
890	139	138.23714	121.82359	82.01417	86.42788
900	140	104.04840	138.63459	102.80061	92.71735
910	141	119.55485	125.60034	137.81890	94.70216
920	142	136.13137	125.53237	91.04429	92.84309
930	143	110.68248	81.33321	75.48183	86.80178
940	144	132.44176	125.59185	71.27587	83.99074
950	145	120.30277	138.80122	71.09344	79.32270
960	146	123.75895	126.21834	117.05255	96.15583
970	147	127.39230	126.16675	112.36603	84.99833
980	148	122.13093	158.44770	128.94890	121.18549
990	149	108.50144	150.58077	103.13435	92.12880
1000	150	121.57277	105.01194	143.50501	84.30858
1010	151	106.90887	128.11933	92.73341	103.84146
1020	152	142.91222	88.26940	78.86081	92.43932
1030	153	136.93132	102.64972	114.09042	104.26312
1040	154	118.44698	115.60163	107.75632	75.76187
1050	155	110.18255	137.86429	95.94110	93.40470
1060	156	119.48608	112.29132	87.56739	91.22911
1070	157	122.07728	118.55610	114.47310	69.96448
1080	158	128.41796	150.37262	121.95260	89.95589
1090	159	123.52834	100.10821	90.61629	66.79685

MEAN OUTPUT LATENCIES FOR THE CORRECT POSITIVE SET RESPONSES

GROUP = INTERRUPTION STIMULUS ONSET TIMES		NONE	VISUAL	AUDITORY	AUDITORY & VISUAL	MARGINAL
-500	1	266.33333	199.05556	195.88889	160.11111	205.34722
-490	2	266.27778	184.88889	207.05556	162.05556	205.06944
-480	3	263.61111	188.50000	205.05556	159.55556	204.18056
-470	4	263.50000	189.50000	200.00000	157.55556	202.63889
-460	5	282.22222	175.00000	198.83333	156.38889	203.11111
-450	6	246.00000	189.66667	204.94444	163.11111	200.93056
-440	7	251.22222	190.33333	197.94444	163.27778	200.69444
-430	8	262.88889	185.44444	198.66667	156.55556	200.88889
-420	9	272.72222	195.83333	223.44444	163.44444	213.86111
-410	10	264.44444	190.44444	207.00000	162.00000	205.97222
-400	11	234.44444	189.00000	200.88889	160.50000	196.20833
-390	12	260.72222	199.00000	207.77778	156.88889	206.09722
-380	13	268.83333	195.27778	211.88889	167.33333	210.83333
-370	14	269.88889	192.66667	203.33333	156.88889	205.69444
-350	15	247.27778	189.61111	199.05556	157.16667	198.27778
-340	16	249.72222	201.33333	213.88889	161.88889	206.70833
-330	17	265.38889	188.94444	210.94444	163.22222	207.12500
-320	18	265.94444	198.33333	206.00000	172.00000	210.56944
-310	19	262.61111	184.88889	203.00000	161.16667	202.91667
-300	20	263.11111	192.00000	196.33333	161.16667	203.15278
-290	21	267.16667	185.50000	203.44444	159.50000	203.90278
-280	22	266.88889	186.00000	207.44444	165.33333	206.41667
-270	23	263.77778	191.83333	194.50000	160.11111	202.55556
-260	24	274.83333	187.16667	212.77778	165.94444	210.18056
-250	25	270.88889	196.55556	208.38889	165.94444	210.44444
-240	26	248.83333	195.16667	198.66667	166.27778	202.23611
-230	27	263.22222	190.00000	203.44444	162.44444	204.77778
-220	28	253.66667	179.55556	193.55556	158.00000	196.19444
-210	29	264.72222	194.11111	198.50000	160.77778	204.52778
-200	30	273.66667	191.61111	211.50000	158.05556	208.70833
-190	31	277.66667	196.88889	204.61111	160.00000	209.79167
-180	32	251.94444	194.55556	205.38889	163.66667	203.88889
-170	33	246.72222	188.66667	205.00000	162.66667	200.76389
-160	34	258.00000	189.88889	200.27778	161.05556	202.30556
-150	35	267.77778	193.72222	208.00000	146.38889	203.97222
-140	36	257.77778	188.33333	196.27778	158.16667	200.26389
-130	37	269.05556	183.05556	207.27778	158.27778	204.41667
-120	38	252.16667	190.11111	198.77778	162.66667	200.93056
-110	39	275.11111	186.44444	208.55556	164.00000	208.52778
-100	40	266.88889	190.55556	203.00000	161.72222	205.54167
-90	41	237.61111	194.16667	212.83333	160.22222	201.20833
-80	42	253.61111	196.55556	205.94444	166.50000	205.65278
-70	43	262.33333	191.66667	204.50000	157.50000	204.00000
-60	44	262.44444	190.05556	199.22222	158.94444	202.66667
-50	45	261.44444	178.44444	210.61111	157.55556	202.01389
-40	46	242.27778	185.77778	200.16667	158.05556	196.56944
-30	47	272.61111	193.66667	212.05556	160.44444	209.69444
-20	48	254.16667	179.38889	199.72222	159.38889	198.16667
-10	49	270.61111	195.33333	217.72222	160.50000	211.04167
0	50	280.22222	191.05556	197.05556	159.77778	207.02778
10	51	253.88889	185.94444	203.44444	159.33333	200.65278
20	52	262.33333	195.05556	205.66667	162.55556	206.40278
30	53	248.33333	188.88889	192.05556	163.83333	198.27778
40	54	263.88889	187.77778	203.33333	159.16667	203.54167
50	55	255.61111	193.05556	201.83333	156.88889	201.84722
60	56	257.61111	192.27778	208.66667	162.44444	205.25000
70	57	240.66667	187.88889	197.94444	159.22222	196.43056

80	58	261.88889	187.44444	200.77778	158.61111	202.18056
90	59	258.55556	194.83333	210.33333	159.66667	205.84722
100	60	263.72222	195.77778	205.00000	162.55556	206.76389
110	61	260.27778	195.05556	202.55556	162.83333	210.18056
120	62	272.16667	195.55556	213.94444	164.27778	211.48611
130	63	243.38889	183.66667	207.00000	162.33333	199.09722
140	64	261.44444	188.33333	205.05556	160.94444	203.94444
150	65	252.11111	192.72222	206.22222	162.33333	203.34722
160	66	267.00000	190.77778	206.66667	162.11111	206.63889
170	67	249.33333	186.16667	195.50000	159.05556	197.51389
180	68	249.00000	189.61111	199.11111	161.22222	199.73611
190	69	263.83333	191.11111	197.33333	166.22222	204.62500
200	70	250.50000	195.66667	201.16667	161.00000	202.08333
210	71	262.33333	187.50000	203.11111	160.00000	203.23611
220	72	264.88889	187.16667	207.16667	162.83333	205.51389
230	73	265.22222	192.66667	207.33333	162.77778	207.00000
240	74	249.27778	192.33333	204.22222	160.61111	201.61111
250	75	251.05556	190.38889	206.94444	158.50000	201.72222
260	76	252.38889	188.27778	199.22222	158.83333	199.68056
270	77	259.83333	189.72222	208.77778	163.05556	205.34722
280	78	258.05556	190.27778	201.44444	162.00000	202.94444
290	79	250.33333	191.94444	201.83333	164.00000	202.02778
300	80	262.27778	199.05556	209.50000	165.44444	209.06944
310	81	265.66667	193.05556	197.88889	164.72222	205.33333
320	82	245.94444	194.05556	197.44444	161.88889	199.83333
330	83	261.16667	191.44444	203.27778	161.16667	204.26389
340	84	250.16667	176.55556	202.16667	161.16667	197.51389
350	85	268.16667	193.50000	207.22222	163.94444	208.20833
360	86	246.50000	189.22222	197.05556	162.33333	198.77778
370	87	256.16667	190.11111	201.77778	164.33333	203.09722
380	88	243.50000	193.38889	196.50000	158.83333	198.05556
390	89	244.11111	185.33333	202.88889	158.66667	197.75000
400	90	261.50000	196.55556	197.00000	159.61111	203.66667
410	91	247.77778	185.55556	204.88889	156.77778	198.75000
420	92	262.11111	193.88889	200.33333	163.16667	204.87500
430	93	252.50000	189.16667	198.44444	157.05556	199.29167
440	94	243.00000	198.44444	194.66667	163.50000	199.90278
450	95	261.83333	191.94444	218.05556	159.72222	207.88889
460	96	266.94444	198.22222	206.33333	161.83333	208.33333
470	97	253.00000	185.77778	195.05556	162.88889	199.18056
480	98	262.72222	187.72222	202.33333	160.00000	203.19444
490	99	265.61111	191.44444	216.33333	160.88889	208.56944
500	100	265.77778	188.50000	204.72222	159.44444	204.61111
510	101	258.66667	191.11111	205.05556	166.88889	205.43056
520	102	258.77778	188.88889	208.22222	160.27778	204.04167
530	103	268.77778	193.50000	217.11111	160.66667	210.01389
540	104	265.11111	196.44444	200.61111	163.33333	206.37500
550	105	265.94444	191.27778	210.22222	162.11111	207.38889
560	106	259.38889	184.88889	196.50000	160.38889	200.29167
570	107	256.11111	188.16667	210.33333	163.44444	204.51389
580	108	264.16667	191.16667	196.00000	162.27778	203.40278
590	109	271.55556	194.11111	214.27778	161.33333	210.31944
600	110	250.11111	193.72222	200.44444	162.38889	201.66667
610	111	231.83333	189.66667	202.22222	159.05556	195.69444
620	112	267.83333	192.16667	213.27778	161.66667	208.73611
630	113	248.83333	192.27778	201.11111	162.66667	201.22222
640	114	258.38889	181.38889	201.66667	158.72222	202.54167
650	115	259.38889	192.27778	209.38889	165.55556	206.77778
660	116	265.22222	190.77778	214.22222	164.50000	208.68056
670	117	261.77778	185.50000	200.77778	158.88889	201.73611
680	118	262.44444	193.11111	208.66667	162.05556	206.56944
690	119	256.83333	185.61111	194.72222	170.00000	201.79167
700	120	266.72222	190.55556	206.16667	160.77778	206.05556
710	121	270.38889	192.22222	209.38889	159.72222	207.93056

720	122	266.00000	198.22222	216.11111	159.77778	210.02778
730	123	260.27778	194.88889	198.66667	162.77778	204.15278
740	124	247.77778	187.22222	197.88889	160.77778	198.41667
750	125	263.55556	198.50000	210.50000	164.55556	209.27778
760	126	260.38889	181.66667	199.94444	159.27778	200.31944
770	127	244.00000	184.66667	196.83333	166.50000	198.50000
780	128	277.00000	190.77778	206.38889	163.88889	209.51389
790	129	267.50000	196.77778	207.77778	160.16667	208.05556
800	130	264.88889	186.88889	204.94444	159.83333	204.13889
810	131	276.05556	183.33333	201.50000	160.50000	205.34722
820	132	270.94444	195.72222	197.88889	164.44444	207.25000
830	133	268.72222	198.55556	214.05556	162.11111	210.86111
840	134	266.83333	189.55556	203.77778	165.22222	206.34722
850	135	276.88889	198.16667	209.61111	162.72222	211.84722
860	136	263.11111	197.44444	207.50000	164.05556	208.02778
870	137	258.44444	189.88889	204.72222	160.38889	203.36111
880	138	253.05556	189.05556	209.16667	162.22222	203.37500
890	139	262.22222	193.50000	196.50000	159.72222	202.98611
900	140	247.94444	191.55556	204.77778	165.44444	202.43056
910	141	238.61111	189.61111	205.05556	160.44444	198.43056
920	142	256.33333	189.38889	209.88889	161.83333	204.36111
930	143	256.94444	185.77778	200.55556	158.38889	200.41667
940	144	261.33333	191.55556	200.61111	163.55556	204.26389
950	145	265.11111	190.50000	207.77778	162.05556	206.36111
960	146	261.66667	188.88889	202.33333	160.50000	203.34722
970	147	268.72222	192.11111	207.83333	165.27778	208.48611
980	148	272.55556	196.88889	214.11111	165.22222	212.19444
990	149	261.11111	195.44444	203.66667	163.50000	205.93056
1000	150	263.72222	193.00000	209.88889	162.44444	207.26389
1010	151	265.38889	199.00000	207.61111	162.83333	208.70833
1020	152	262.50000	184.44444	203.66667	156.83333	201.86111
1030	153	269.94444	189.50000	215.38889	166.38889	210.30556
1040	154	256.88889	188.38889	208.72222	161.27778	203.81944
1050	155	238.50000	192.88889	199.16667	166.16667	199.18056
1060	156	247.33333	192.00000	203.16667	163.33333	201.45833
1070	157	261.38889	190.27778	217.55556	161.88889	207.77778
1080	158	251.44444	191.88889	202.94444	160.94444	201.80556
1090	159	267.88889	195.88889	202.66667	159.05556	206.37500
MARGINAL		260.07827	190.81481	204.47973	161.52096	204.22345
SUBJECTS		9	9	9	9	36

STANDARD DEVIATIONS FOR THE OUTPUT LATENCIES CORRECT POSITIVE RESPONSES

GROUP =	NONE	VISUAL	AUDITORY	AUDITORY & VISUAL
INTERRUPTION STIMULUS ONSET TIMES				
-500	1	129.68182	65.99926	64.48390	35.24980
-490	2	137.96651	51.80660	93.39682	36.19431
-480	3	131.35491	45.41544	86.03032	32.95968
-470	4	133.75374	51.56246	80.88379	36.99024
-460	5	173.23667	33.78609	70.20506	36.00762
-450	6	111.38419	36.90190	92.25930	39.05347
-440	7	129.02570	54.28110	63.44114	39.40980
-430	8	136.27701	51.28623	70.39664	32.80286
-420	9	139.37833	66.42195	104.62416	33.02787
-410	10	129.45594	58.66294	77.94189	34.11561
-400	11	107.34246	51.72221	75.79321	37.23909
-390	12	124.41114	61.60306	82.94995	34.45720
-380	13	140.35023	46.74673	99.03086	33.52611
-370	14	130.97132	59.18404	82.71223	35.70082
-350	15	120.03414	55.61575	83.37245	37.60901
-340	16	117.98758	51.39657	100.73659	37.40219
-330	17	139.42757	46.16644	94.61582	36.75520
-320	18	131.92930	63.43944	79.87842	39.95544
-310	19	136.21210	49.69455	82.52083	39.79479
-300	20	138.41215	51.55943	69.93703	36.07198
-290	21	136.69492	51.85316	72.02406	33.53916
-280	22	124.60357	44.14960	82.70257	32.46922
-270	23	137.54979	53.61378	75.51035	33.94368
-260	24	154.26540	45.66522	65.79234	35.19095
-250	25	143.54393	66.22709	84.30183	35.59709
-240	26	119.87050	58.80848	70.13514	36.12401
-230	27	133.32388	49.36915	86.20595	36.31326
-220	28	118.42007	35.78534	62.68046	34.04868
-210	29	124.21255	53.64628	72.66576	34.03593
-200	30	127.36537	53.42798	88.09051	31.47960
-190	31	146.36449	68.68623	94.93411	33.97701
-180	32	120.01392	56.13290	86.26695	32.22383
-170	33	117.93433	45.71310	100.35095	33.99540
-160	34	126.05777	52.19601	64.00835	39.38547
-150	35	153.41185	55.11302	104.54574	32.16537
-140	36	133.98393	46.61411	67.84869	37.05823
-130	37	135.39074	65.32871	83.37270	36.87658
-120	38	118.35593	46.50455	82.20140	37.80377
-110	39	145.12684	46.14207	89.93034	36.61540
-100	40	136.94474	51.39397	85.76239	38.43591
-90	41	112.32341	45.50137	91.03502	34.17429
-80	42	130.20003	55.50194	75.32531	32.46152
-70	43	135.30267	60.36141	83.47754	36.20428
-60	44	126.01921	48.14395	68.05931	36.10959
-50	45	137.96364	39.87280	73.01531	36.28657
-40	46	115.84653	52.16447	73.70338	32.21553
-30	47	132.41926	51.34929	84.49016	34.35335
-20	48	126.44193	47.95100	80.98577	37.27833
-10	49	135.88869	67.65030	94.96615	35.66949
0	50	152.31856	58.24165	68.68062	33.84257
10	51	125.46931	45.20332	86.31173	31.66129
20	52	124.88520	59.35631	68.87897	37.12095
30	53	120.99303	52.68941	51.15689	35.39509
40	54	133.99179	49.63247	92.23103	39.56798
50	55	119.48477	56.61959	84.75258	35.93203
60	56	119.37645	47.97598	99.43811	41.29425

70	57	108.36253	39.26972	74.00103	37.17115
80	58	149.23509	46.32524	69.79797	33.89301
90	59	123.14155	51.85918	85.16491	34.66987
100	60	128.95278	59.76352	74.99792	34.60622
110	61	147.60380	64.22346	85.48737	33.66099
120	62	136.34286	61.52360	93.33523	39.90936
130	63	132.84337	40.72238	93.41875	36.74660
140	64	135.62919	54.40990	78.32881	39.80220
150	65	120.90874	49.34452	96.97039	36.22240
160	66	147.67320	57.68726	91.35644	38.05570
170	67	126.81630	40.77836	64.19891	37.16639
180	68	124.62017	45.01443	86.35167	39.63278
190	69	149.73017	54.54916	58.72287	36.41352
200	70	121.36615	56.54976	75.25332	36.54107
210	71	142.22407	54.90275	91.41362	38.86435
220	72	132.46079	44.10357	85.50877	33.29696
230	73	133.19725	53.84004	85.18766	36.60525
240	74	114.33479	53.20890	97.06380	37.45896
250	75	127.48025	49.86656	84.29392	37.70859
260	76	122.96208	54.43581	86.81846	37.69864
270	77	133.01457	57.78252	91.34554	36.68229
280	78	131.76125	43.56899	73.11397	36.04338
290	79	122.36830	52.96861	82.30090	37.66630
300	80	132.68386	62.39063	94.32457	40.73653
310	81	131.45223	52.33671	77.16896	35.39342
320	82	112.14066	50.00215	75.43186	36.40637
330	83	124.11990	64.42556	85.41081	32.69174
340	84	116.30080	41.27987	91.18217	37.43745
350	85	137.26412	58.45725	96.11358	36.41381
360	86	125.95609	51.32501	67.27762	38.46589
370	87	162.28062	48.67159	73.56932	33.92823
380	88	118.28039	47.36033	71.35300	38.56245
390	89	113.70048	46.02717	91.19134	40.43745
400	90	132.83613	59.09867	63.35318	34.75879
410	91	125.03077	39.44018	100.09520	39.04413
420	92	121.48297	59.62318	68.38311	37.14078
430	93	116.39588	43.15307	84.93690	35.77748
440	94	112.80486	52.50146	71.52229	38.20586
450	95	122.67793	53.88033	109.04026	37.15013
460	96	130.88842	64.45692	87.89696	34.94460
470	97	127.12199	43.69147	71.12245	34.74440
480	98	142.92527	51.12125	83.33854	38.02631
490	99	125.26367	50.58313	104.35906	32.60059
500	100	126.30274	49.89739	79.13403	36.87347
510	101	130.47509	55.55697	59.05371	36.67235
520	102	118.63892	49.22892	90.23272	35.24035
530	103	133.29130	58.63979	102.87425	32.96400
540	104	124.02565	57.06983	80.38920	35.16301
550	105	131.75793	54.61519	82.41325	38.69252
560	106	138.17850	52.23192	57.72835	36.24808
570	107	122.18653	47.55983	90.28806	35.87517
580	108	123.03531	49.30074	66.03739	33.88502
590	109	134.04650	54.86619	76.02718	35.11143
600	110	117.28458	49.53352	76.68052	39.54805
610	111	103.41614	49.13565	93.26411	36.54487
620	112	133.32221	53.45968	93.83833	31.47420
630	113	118.86755	53.28820	71.50296	36.37822
640	114	132.89629	37.88039	70.24555	36.74924
650	115	134.98976	51.16585	89.82336	34.56827
660	116	140.00404	47.06917	108.03157	38.86756
670	117	145.75731	54.99375	63.58563	35.02390
680	118	127.50330	64.04724	84.65629	33.66233
690	119	113.38403	44.11900	77.73557	30.06659
700	120	127.97415	50.09332	97.01707	36.64351

710	121	127.67507	48.99433	100.89406	35.84525
720	122	129.26886	57.00499	99.54295	37.31463
730	123	128.69735	52.92434	77.11234	43.92900
740	124	114.73015	42.88073	87.02865	39.85137
750	125	123.37784	55.80603	92.13950	33.79668
760	126	133.88586	44.50211	78.46195	35.79552
770	127	111.57145	40.65480	74.26936	38.65391
780	128	127.44533	66.91371	98.21303	40.80960
790	129	124.12871	60.72433	83.95799	34.57329
800	130	133.84431	49.43226	81.28324	36.76530
810	131	151.18169	35.83731	80.63537	36.23448
820	132	130.74533	62.78142	64.07504	35.36369
830	133	120.66123	60.76874	89.87646	34.83692
840	134	135.57493	48.98370	69.03175	34.33303
850	135	137.54971	54.76541	88.65233	37.87324
860	136	126.48784	71.03364	92.36680	36.45926
870	137	123.20193	50.33375	84.54256	38.95172
880	138	109.58628	54.00373	79.90893	32.09664
890	139	138.07632	52.11766	54.80078	37.89221
900	140	118.11341	53.28957	82.32030	33.23820
910	141	112.58269	39.02866	86.73827	40.68203
920	142	132.37754	55.52577	102.09456	34.82277
930	143	120.72009	43.71935	73.03742	37.74568
940	144	135.80685	54.54725	80.22148	38.80677
950	145	132.88970	56.34936	89.29625	36.49696
960	146	128.19980	56.41242	78.35456	39.70438
970	147	144.17917	53.38936	85.48684	34.69548
980	148	135.65062	58.71476	84.65658	37.56171
990	149	132.11353	65.25500	80.43476	33.09928
1000	150	122.11550	45.94630	98.86347	37.97898
1010	151	132.91816	51.75664	90.35305	36.77295
1020	152	144.41390	47.24765	79.55698	36.77465
1030	153	139.50122	45.20163	105.19945	37.90100
1040	154	118.89722	46.62535	87.47289	33.83426
1050	155	109.21081	54.72532	79.71198	33.52611
1060	156	116.67235	50.52227	90.31784	42.03273
1070	157	131.09891	53.91029	112.66445	33.61062
1080	158	119.10013	52.88418	78.46474	34.63600
1090	159	141.25747	59.03218	74.76839	33.72448

MEAN INPUT LATENCY FOR THE CORRECT NEGATIVE SET RESPONSES

GROUP INTERRUPTION ONSET TIMES	STIMULUS	NONE	VISUAL	AUDITORY	AUDITORY & VISUAL	MARGINAL
-500	1	405.44444	386.83333	384.50000	433.88889	402.66667
-490	2	426.94444	376.83333	403.22222	416.11111	406.27778
-480	3	449.55556	428.83333	430.16667	453.16667	440.43056
-470	4	465.38889	417.83333	422.72222	484.61111	447.63889
-460	5	417.11111	392.44444	428.33333	438.61111	419.12500
-450	6	475.33333	464.66667	477.88889	493.72222	477.90278
-440	7	445.66667	389.05556	419.55556	426.61111	419.97222
-430	8	464.72222	411.38889	417.77778	412.00000	426.47222
-420	9	463.38889	397.66667	463.05556	466.11111	447.55556
-410	10	452.27778	428.22222	443.00000	464.77778	447.06944
-400	11	465.55556	406.44444	403.66667	447.55556	430.80556
-390	12	471.55556	412.11111	408.50000	439.66667	432.95833
-380	13	537.94444	448.33333	469.72222	539.50000	498.87500
-370	14	431.38889	410.55556	460.33333	458.77778	440.26389
-360	15	498.77778	417.44444	433.16667	475.44444	456.20833
-350	16	425.38889	406.16667	417.72222	448.05556	424.33333
-340	17	461.16667	397.61111	428.16667	417.61111	426.13889
-330	18	455.11111	416.83333	434.22222	451.94444	439.52778
-320	19	436.66667	414.77778	454.83333	478.22222	446.12500
-310	20	487.66667	444.16667	458.16667	472.05556	465.51389
-300	21	478.50000	425.00000	468.50000	460.11111	458.02778
-290	22	429.44444	431.83333	449.27778	464.05556	443.65278
-280	23	435.50000	406.05556	390.61111	435.11111	416.81944
-270	24	465.66667	360.94444	395.11111	443.22222	416.23611
-260	25	452.38889	393.61111	448.16667	419.11111	428.31944
-250	26	467.94444	449.50000	486.77778	462.44444	466.66667
-240	27	418.44444	382.05556	412.22222	427.33333	410.01389
-230	28	465.16667	409.83333	409.55556	455.05556	434.90278
-220	29	416.50000	387.33333	421.22222	398.50000	405.88889
-200	30	463.77778	489.88889	500.44444	478.83333	483.23611
-190	31	442.77778	435.44444	428.61111	484.16667	447.75000
-180	32	492.55556	416.66667	453.38889	488.38889	462.75000
-170	33	434.38889	392.44444	387.83889	435.22222	412.48611
-160	34	440.77778	397.00000	401.72222	436.27778	418.94444
-150	35	477.38889	407.66667	428.66667	428.38889	435.52778
-140	36	438.11111	405.77778	437.05556	464.88889	436.45833
-130	37	407.94444	375.38889	438.22222	422.94444	411.12500
-120	38	448.33333	415.61111	435.66667	444.16667	435.94444
-110	39	418.05556	420.16667	435.50000	459.77778	433.37500
-100	40	405.00000	382.00000	411.88889	453.00000	412.97222
-90	41	473.94444	443.50000	464.83333	480.33333	465.65278
-80	42	495.00000	469.66667	493.83333	496.83333	488.83333
-70	43	425.83333	400.33333	425.05556	433.33333	421.13889
-60	44	502.16667	423.11111	466.55556	465.22222	464.76389
-50	45	495.22222	436.66667	462.16667	505.00000	474.76389
-40	46	505.16667	439.38889	470.55556	486.83333	475.98611
-30	47	494.05556	492.72222	483.94444	511.72222	495.61111
-20	48	456.44444	411.11111	442.00000	456.72222	441.56944
-10	49	442.27778	456.83333	497.44444	452.88889	462.36111
0	50	467.38889	510.83333	462.22222	512.72222	488.29167
10	51	376.94444	398.83333	396.33333	411.22222	395.83333
20	52	414.00000	437.94444	440.83333	467.27778	440.01389
30	53	415.55556	427.66667	462.11111	474.61111	444.98611
40	54	484.61111	478.05556	471.88889	487.22222	480.44444
50	55	482.27778	435.55556	455.33333	503.33333	481.62500
60	56	493.27778	457.83333	459.77778	467.22222	469.52778
70	57	477.00000	438.05556	422.05556	462.00000	449.77778

80	58	431.72222	455.22222	457.44444	531.50000	481.47222
90	59	487.83333	484.50000	523.61111	526.27778	505.55556
100	60	412.50000	417.72222	371.16667	455.00000	414.09722
110	61	500.55556	505.72222	478.50000	523.16667	501.98611
120	62	404.05556	409.55556	408.55556	474.11111	424.06944
130	63	446.72222	436.11111	408.27778	478.11111	442.30556
140	64	402.55556	428.00000	421.50000	474.00000	431.51389
150	65	450.16667	466.83333	436.66667	495.16667	462.20833
160	66	455.77778	465.55556	457.55556	502.83333	470.43056
170	67	455.22222	454.11111	437.22222	483.38889	457.48611
180	68	427.61111	465.50000	461.55556	502.66667	464.33333
190	69	414.44444	444.72222	445.50000	478.05556	445.68056
200	70	373.16667	397.66667	410.66667	441.88889	405.84722
220	71	437.33333	473.38889	466.16667	475.61111	463.12500
230	72	386.61111	435.22222	419.50000	474.88889	429.05556
240	73	531.50000	479.22222	479.94444	509.44444	500.02778
250	74	505.16667	502.05556	463.61111	566.94444	509.44444
260	75	497.16667	479.22222	481.55556	522.11111	495.01389
270	76	378.55556	416.33333	413.38889	439.11111	411.84722
280	77	448.55556	453.83333	463.00000	496.44444	465.45833
290	78	465.16667	523.22222	457.11111	493.16667	484.66667
300	79	411.88889	436.05556	410.27778	466.88889	431.27778
310	80	535.11111	587.38889	534.33333	535.55556	548.09722
320	81	469.72222	500.94444	482.05556	529.00000	495.43056
330	82	438.72222	456.55556	446.94444	496.11111	459.58333
340	83	415.00000	466.05556	436.22222	467.55556	446.20833
350	84	432.77778	461.50000	428.72222	466.77778	447.44444
360	85	404.00000	438.05556	412.38889	459.88889	428.58333
370	86	465.16667	481.22222	461.27778	482.05556	472.43056
380	87	434.33333	447.83333	467.44444	472.66667	455.56944
390	88	521.00000	529.83333	524.33333	524.55556	524.93056
400	89	414.38889	449.94444	434.16667	467.50000	441.50000
410	90	455.22222	510.94444	460.72222	498.27778	481.29167
420	91	421.88889	442.44444	422.61111	448.88889	433.95833
430	92	607.00000	564.05556	543.94444	567.05556	570.51389
440	93	414.00000	459.88889	405.94444	445.00000	431.20833
450	94	506.00000	513.05556	482.27778	562.16667	515.87500
460	95	471.16667	475.33333	472.94444	510.61111	482.51389
470	96	433.83333	453.38889	435.27778	439.11111	440.40278
480	97	416.33333	452.66667	435.88889	459.22222	441.02778
490	98	448.77778	464.33333	432.50000	476.61111	455.55556
500	99	422.88889	450.77778	434.50000	461.00000	442.29167
510	100	450.16667	485.16667	441.55556	481.61111	464.62500
520	101	511.11111	461.33333	452.66667	502.77778	481.97222
530	102	402.83333	454.27778	409.33333	460.33333	431.69444
540	103	478.33333	467.66667	433.61111	462.88889	460.62500
550	104	504.05556	514.27778	461.77778	528.61111	502.18056
560	105	386.50000	424.00000	410.11111	429.83333	412.61111
570	106	460.27778	485.27778	480.66667	502.11111	482.08333
580	107	422.33333	451.11111	437.33333	526.11111	459.22222
590	108	436.22222	465.33333	463.33333	489.05556	463.48611
600	109	416.16667	440.61111	411.38889	471.88889	435.13889
610	110	530.05556	584.66667	552.55556	560.27778	556.88889
620	111	460.72222	463.61111	449.38889	520.44444	473.54167
630	112	461.55556	505.88889	474.83333	506.05556	487.08333
640	113	387.33333	429.66667	398.55556	426.05556	410.40278
650	114	487.72222	468.83333	455.77778	499.50000	477.95833
660	115	504.66667	505.83333	475.50000	519.66667	501.41667
670	116	415.38889	422.66667	427.94444	446.05556	428.01389
680	117	495.38889	480.50000	475.66667	519.22222	492.69444
690	118	457.94444	448.83333	416.22222	470.72222	448.43056
700	119	553.00000	497.55556	497.00000	533.50000	520.26389
710	120	494.33333	471.72222	437.22222	520.94444	478.55556
720	121	456.55556	475.27778	466.61111	523.66667	480.52778

730	122	450.88889	431.11111	416.11111	443.27778	435.34722
740	123	421.61111	423.55556	409.55556	457.88889	428.15278
750	124	468.38889	470.61111	447.72222	496.16667	470.72222
760	125	474.05556	461.33333	458.72222	481.94444	469.01389
770	126	514.61111	475.94444	453.83333	514.05556	489.61111
780	127	504.77778	497.83333	510.61111	536.16667	512.34722
800	128	516.38889	493.83333	544.55556	529.77778	521.13889
810	129	458.11111	485.33333	451.22222	482.38889	469.26389
820	130	454.88889	473.83333	431.66667	513.94444	468.58333
830	131	453.16667	460.44444	435.44444	506.55556	463.90278
840	132	453.00000	461.77778	469.27778	513.11111	474.29167
850	133	452.94444	435.55556	449.88889	473.22222	452.90278
860	134	424.00000	441.88889	405.33333	452.83333	431.01389
870	135	410.22222	438.66667	430.61111	476.77778	439.06944
880	136	398.05556	425.00000	419.16667	457.61111	424.95833
890	137	450.16667	491.22222	466.22222	506.66667	478.56944
900	138	420.94444	471.38889	440.55556	486.61111	454.87500
910	139	397.77778	423.55556	432.00000	475.00000	432.08333
920	140	514.94444	505.44444	466.77778	516.72222	500.97222
930	141	473.50000	494.38889	479.27778	535.94444	495.77778
940	142	453.33333	476.88889	440.38889	471.33333	460.48611
950	143	450.55556	458.55556	465.38889	498.83333	468.33333
960	144	395.27778	427.72222	401.00000	447.00000	417.75000
970	145	409.83333	426.27778	458.22222	449.00000	435.83333
980	146	417.22222	443.55556	419.27778	449.61111	432.41667
990	147	438.00000	418.44444	473.61111	461.05556	447.77778
1000	148	402.66667	415.38889	410.66667	439.11111	416.95833
1010	149	499.27778	498.33333	482.61111	527.77778	502.00000
1020	150	546.27778	514.61111	478.88889	521.77778	515.38889
1030	151	439.44444	455.44444	439.66667	476.66667	452.80556
1040	152	497.44444	460.72222	475.11111	509.83333	485.77778
1050	153	525.61111	494.22222	539.94444	536.77778	524.13889
1060	154	431.00000	517.94444	478.72222	509.50000	496.79167
1070	155	448.44444	491.27778	462.38889	492.55556	473.66667
1080	156	444.44444	454.44444	434.44444	449.72222	445.76389
1090	157	455.88889	474.72222	447.83333	490.05556	467.12500
MARGINAL		454.90658	450.89774	447.52689	479.13977	458.11775
SUBJECTS		9	9	9	9	36

STANDARD DEVIATIONS FOR THE CORRECT NEGATIVE SET INPUT LATENCIES

GROUP = NONE		VISUAL	AUDITORY	AUDITORY & VISUAL
INTERRUPTION ONSET TIMES	STIMULUS			
-500	1	97.31054	112.69178	131.58196	105.53222
-490	2	98.54930	86.94431	93.61627	118.46750
-480	3	79.01165	118.24894	142.92306	110.41371
-470	4	95.31487	125.41008	138.17722	130.28353
-460	5	91.43330	117.70074	175.16207	98.22034
-450	6	95.84656	149.67590	183.74622	173.94595
-440	7	83.05871	153.31859	191.69172	107.84096
-430	8	102.28151	178.86216	127.76030	115.88087
-420	9	86.69659	103.92245	178.02623	113.37239
-410	10	103.94864	146.12133	175.89645	118.43250
-400	11	127.06604	102.21712	142.02575	119.80517
-390	12	64.85823	125.17632	152.53668	106.13759
-380	13	119.99907	141.29977	178.48741	154.58210
-370	14	105.71624	141.79837	189.00926	150.49691
-360	15	72.15353	111.82113	140.91930	153.24418
-350	16	102.80740	152.37782	160.35432	151.64956
-340	17	68.43473	125.82224	139.87360	77.56319
-330	18	99.24552	151.53486	178.32206	100.61295
-320	19	100.43904	104.62257	99.30037	143.82348
-310	20	96.96165	128.05224	163.64252	118.91710
-300	21	121.02531	196.61288	135.35855	120.12176
-290	22	110.73771	107.90369	116.51746	88.07647
-280	23	95.20176	135.52731	127.02652	127.23742
-270	24	80.97222	142.32521	137.79350	121.99798
-260	25	106.37222	123.95785	162.81431	96.02174
-250	26	92.90904	176.60478	136.19612	113.71385
-240	27	116.91168	123.66094	132.81663	105.91270
-230	28	102.91835	125.90770	138.36872	138.88539
-220	29	94.21418	131.00668	132.23325	85.84252
-200	30	75.15239	199.70084	152.67601	129.00872
-190	31	117.14844	129.04080	155.47121	113.17989
-180	32	53.77002	135.80915	170.65733	135.24602
-170	33	102.32264	95.82518	103.08879	125.81959
-160	34	71.76094	111.68454	148.05618	121.12754
-150	35	90.10923	118.26506	162.60631	111.65090
-140	36	92.14756	94.08510	154.90732	129.71261
-130	37	129.91065	105.51889	194.83216	96.57557
-120	38	86.37599	133.40394	163.80639	115.22261
-110	39	128.60998	154.80209	128.18614	133.48200
-100	40	130.50144	120.74586	136.71475	145.46477
-90	41	96.57621	115.72381	121.62751	92.92705
-80	42	69.94507	141.55940	176.32729	161.76584
-70	43	111.08415	84.15239	132.56565	81.86460
-60	44	120.53397	147.12809	194.08011	135.11456
-50	45	55.67602	123.38380	152.53668	140.77309
-40	46	117.88580	90.30773	176.91673	121.48251
-30	47	100.03045	169.69165	172.85913	124.09953
-20	48	68.06038	134.71075	194.29600	114.48202
-10	49	108.49773	131.69543	192.68618	111.82318
0	50	106.98095	135.22273	136.48491	127.69767
10	51	112.48484	111.19409	133.34753	105.84632
20	52	92.22416	142.50295	176.50903	148.72691
30	53	101.34608	111.26348	142.66236	111.74546
40	54	98.77524	166.75945	204.24155	158.39845
50	55	77.11643	115.16929	148.84535	105.63528
60	56	102.43050	144.19561	159.84780	101.70795
70	57	85.96838	117.28583	107.10843	85.14546
80	58	70.86259	148.44530	139.38155	197.89202

90	59	66.70926	120.22661	186.33786	122.55486
100	60	109.91929	103.78226	125.54008	124.11613
110	61	121.45149	230.66685	222.49635	141.71208
120	62	109.29503	105.17915	132.17612	121.17776
130	63	86.86919	112.29865	118.57912	99.27732
140	64	92.01068	107.49826	140.01094	90.81437
150	65	75.94900	169.28434	166.53979	146.91388
160	66	107.45904	143.66899	120.79229	170.65114
170	67	105.66667	157.04852	116.36268	124.49769
180	68	99.98493	170.09023	203.83763	111.17076
190	69	115.74013	133.92678	98.40287	109.97228
200	70	107.77552	130.62638	77.19173	97.46499
220	71	103.72289	124.14401	139.98995	106.67380
230	72	102.94197	122.58801	152.49590	111.20723
240	73	81.55405	148.92408	164.99649	135.92816
250	74	114.41126	148.90086	131.37156	195.27872
260	75	101.59817	182.72300	132.14018	122.62921
270	76	116.45075	113.73819	119.92909	116.39340
280	77	90.14310	123.62519	142.98754	131.11670
290	78	84.53550	141.58812	180.11208	95.21128
300	79	96.38230	116.04725	134.86732	136.72915
310	80	74.87397	177.55911	175.56124	98.34933
320	81	83.58196	139.36985	162.81670	175.68562
330	82	133.08529	116.02409	88.64799	110.43600
340	83	102.88070	132.56613	122.76759	144.33932
350	84	105.12169	135.27102	136.21883	134.57993
360	85	118.59569	117.65587	154.26636	116.81657
370	86	82.20021	134.35450	191.30328	116.94081
380	87	93.62158	115.58493	209.66706	128.77039
390	88	93.66196	178.34289	169.77246	133.98728
400	89	110.68502	127.12775	147.98142	106.40371
410	90	142.04271	147.55411	160.66310	142.37453
420	91	108.62400	125.47770	129.33478	104.51070
430	92	189.20871	136.12895	211.56270	129.11924
440	93	116.01239	102.71343	122.68136	127.70254
450	94	71.49781	219.14884	153.24452	144.34594
460	95	83.29091	163.27220	159.56355	153.34332
470	96	79.09093	118.41341	114.72388	108.07659
480	97	85.25806	121.89695	168.00721	110.04065
490	98	56.81885	137.46272	148.99581	140.95296
500	99	104.15277	130.72182	107.38802	97.91131
510	100	107.06657	144.32320	119.87453	85.90539
520	101	143.21701	122.27812	150.61042	153.14742
530	102	113.36060	141.95776	130.24304	120.57778
540	103	89.36093	111.62129	169.04489	99.25182
550	104	104.51120	146.24682	158.13347	160.71049
560	105	130.83745	158.91212	87.92709	99.21536
570	106	94.26031	158.51757	137.20764	114.91023
580	107	94.80012	139.02827	168.61698	189.96410
590	108	107.06047	109.23741	141.16900	106.09796
600	109	85.13629	148.09768	154.48964	111.68504
610	110	92.40179	168.23310	226.98919	147.19186
620	111	82.78667	143.33261	120.74684	147.00520
630	112	92.47481	159.24211	174.22077	101.69115
640	113	123.56425	126.21485	117.37505	123.48695
650	114	77.97079	122.30980	165.95370	109.32492
660	115	129.45511	227.50385	156.77512	146.11276
670	116	89.06591	124.26056	174.84626	112.37311
680	117	70.89066	152.93095	168.25672	99.73030
690	118	110.27252	115.20769	106.57747	105.41291
700	119	80.12490	154.27541	169.43454	164.91759
710	120	82.59237	149.44650	130.22915	191.40344
720	121	118.97937	131.62449	159.09054	156.66227
730	122	81.27115	104.22025	163.41067	113.37028

740	123	84.45294	115.76956	125.08908	99.97118
750	124	85.09031	102.06456	137.74934	113.71923
760	125	94.03272	114.53193	122.00797	112.26516
770	126	103.01692	149.95738	148.84220	128.17991
780	127	85.34696	94.41233	171.68790	123.10869
800	128	68.54368	149.99958	231.43310	137.52775
810	129	93.66255	124.58882	107.27654	140.02361
820	130	103.94523	147.43007	119.72025	193.64682
830	131	83.08994	147.02730	137.68248	140.39174
840	132	137.23497	104.38993	169.35043	215.23037
850	133	90.20825	101.81431	146.63406	108.96792
860	134	108.05901	145.44990	163.26972	137.33900
870	135	106.38230	153.13495	136.05922	177.68408
880	136	126.39161	101.11380	93.62926	120.25696
890	137	107.98524	122.06738	133.67547	136.19655
900	138	100.04013	125.39432	199.12252	96.49539
910	139	126.84738	110.85955	131.74431	155.22725
920	140	95.94544	115.24199	152.63398	117.94122
930	141	110.21003	200.00293	178.95986	205.97155
940	142	66.23868	119.67528	151.97508	105.53909
950	143	76.79089	135.66122	82.57715	164.43654
960	144	108.61604	118.32955	123.18304	157.93749
970	145	108.11366	127.22399	151.88588	90.39289
980	146	98.17335	125.07834	153.24105	135.47435
990	147	93.29255	115.64613	269.41984	149.21722
1000	148	119.54471	94.30959	140.60072	105.38643
1010	149	90.91140	144.00326	170.23784	117.84739
1020	150	75.49798	135.60461	152.40751	118.75713
1030	151	66.44144	109.58257	123.59334	96.90040
1040	152	88.50122	119.53533	144.16652	109.76367
1050	153	58.94689	147.15980	216.25382	107.36885
1060	154	87.33592	178.71284	157.75200	150.82917
1070	155	89.66097	149.23725	145.85626	100.64059
1080	156	74.87550	151.60917	125.53447	106.30149
1090	157	92.08942	142.99740	159.33122	101.81338

MEAN OUTPUT LATENCIES FOR CORRECT NEGATIVE RESPONSES

GROUP =		NONE	VISUAL	AUDITORY	AUDITORY & VISUAL	MARGINAL
INTERRUPTION STIMULUS ONSET TIME						
-500	1	256.50000	193.38889	215.83333	162.16667	206.97222
-490	2	263.61111	200.77778	206.33333	161.27778	208.00000
-480	3	240.61111	198.11111	205.83333	169.50000	203.51389
-470	4	250.27778	192.22222	209.77778	164.77778	204.26389
-460	5	266.77778	196.66667	219.83333	160.11111	210.84722
-450	6	250.61111	188.83333	207.61111	167.38889	203.61111
-440	7	252.72222	196.16667	215.16667	165.55556	207.40278
-430	8	269.66667	206.94444	200.66667	162.11111	209.84722
-420	9	261.44444	195.94444	204.11111	167.16667	207.16667
-410	10	256.83333	197.16667	209.88889	165.72222	207.40278
-400	11	249.00000	194.55556	212.88889	167.33333	205.94444
-390	12	242.66667	199.83333	207.50000	166.88889	204.22222
-380	13	271.66667	196.05556	218.16667	165.55556	212.86111
-370	14	269.61111	198.27778	213.83333	160.38889	210.52778
-360	15	264.00000	198.77778	220.61111	167.16667	212.63889
-350	16	255.55556	197.50000	218.83333	164.50000	209.09722
-340	17	243.16667	196.72222	213.00000	165.44444	204.58333
-330	18	260.88889	199.33333	206.88889	166.00000	208.27778
-320	19	277.77778	194.61111	205.44444	163.83333	210.41667
-310	20	250.27778	191.38889	210.38889	165.38889	204.36111
-300	21	270.72222	207.44444	225.72222	164.05556	216.98611
-290	22	263.16667	192.94444	208.38889	161.44444	206.48611
-280	23	264.50000	198.50000	213.83333	165.11111	210.48611
-270	24	249.50000	202.05556	216.50000	166.88889	208.73611
-260	25	270.11111	208.66667	220.61111	170.94444	217.58333
-250	26	255.61111	209.55556	214.50000	167.66667	211.83333
-240	27	262.83333	199.55556	207.33333	161.27778	207.75000
-230	28	253.44444	195.27778	219.27778	169.61111	209.40278
-220	29	248.72222	191.22222	208.44444	163.27778	202.91667
-200	30	264.77778	207.00000	211.38889	169.16667	213.08333
-190	31	275.22222	203.66667	224.72222	166.88889	217.62500
-180	32	253.94444	201.61111	213.05556	162.50000	207.77778
-170	33	248.05556	191.61111	212.16667	165.83333	204.41667
-160	34	264.00000	204.77778	224.16667	172.16667	216.27778
-150	35	245.05556	196.55556	201.33333	164.83333	201.94444
-140	36	257.61111	195.22222	219.27778	164.27778	209.09722
-130	37	260.38889	196.16667	211.77778	172.33333	210.16667
-120	38	249.00000	197.94444	212.55556	170.77778	207.56944
-110	39	267.05556	208.66667	206.72222	162.61111	211.26389
-100	40	258.11111	198.88889	208.61111	165.72222	207.83333
-90	41	248.55556	198.44444	209.38889	164.00000	205.09722
-80	42	264.16667	191.50000	214.61111	167.94444	209.55556
-70	43	262.94444	191.72222	210.83333	167.44444	208.23611
-60	44	248.33333	211.11111	225.33333	169.44444	213.55556
-50	45	261.61111	204.16667	208.38889	165.00000	209.79167
-40	46	246.38889	192.88889	217.77778	168.27778	206.83333
-30	47	272.94444	203.00000	215.50000	167.00000	214.61111
-20	48	264.05556	198.11111	217.72222	163.61111	210.87500
-10	49	266.11111	196.77778	216.22222	165.77778	211.22222
0	50	269.33333	206.77778	224.50000	169.00000	217.40278
10	51	265.22222	196.50000	205.11111	162.38889	207.30556
20	52	252.27778	191.27778	210.05556	165.27778	204.72222
30	53	254.38889	195.55556	203.83333	170.61111	206.09722
40	54	274.77778	197.50000	209.61111	164.61111	211.62500
50	55	258.50000	202.05556	215.22222	166.33333	210.52778

60	56	249.61111	194.77778	218.83333	169.72222	208.23611
70	57	248.61111	202.27778	213.72222	168.88889	208.37500
80	58	274.22222	204.61111	210.77778	164.88889	213.62500
90	59	263.72222	198.05556	202.33333	163.83333	206.98611
100	60	260.00000	200.94444	221.22222	161.44444	210.90278
110	61	254.05556	199.38889	224.33333	169.11111	211.72222
120	62	278.66667	199.50000	211.27778	160.61111	212.51389
130	63	246.22222	203.66667	223.00000	165.50000	209.59722
140	64	266.72222	199.16667	216.22222	162.27778	211.09722
150	65	260.94444	201.33333	219.33333	167.94444	212.38889
160	66	262.38889	203.94444	202.77778	169.94444	209.76389
170	67	253.38889	200.55556	206.83333	161.27778	205.51389
180	68	270.50000	209.38889	220.50000	163.00000	215.84722
190	69	266.50000	199.00000	206.16667	167.44444	209.77778
200	70	274.55556	202.11111	203.27778	161.72222	210.41667
220	71	257.88889	197.22222	198.77778	167.44444	205.33333
230	72	262.27778	200.61111	215.44444	166.11111	211.11111
240	73	258.44444	202.61111	213.33333	173.05556	211.86111
250	74	258.38889	198.27778	210.72222	168.16667	208.88889
260	75	238.83333	201.00000	217.72222	167.16667	206.18056
270	76	278.11111	204.22222	198.72222	164.16667	211.30556
280	77	243.83333	202.88889	217.05556	168.50000	208.06944
290	78	269.55556	197.00000	218.05556	162.66667	211.81944
300	79	259.05556	204.22222	208.33333	163.16667	208.69444
310	80	257.00000	191.27778	202.50000	169.38889	205.04167
320	81	261.83333	195.88889	214.94444	166.86889	209.88889
330	82	265.22222	204.27778	205.55556	168.22222	210.81944
340	83	266.83333	196.50000	207.88889	168.11111	209.83333
350	84	253.44444	202.55556	208.05556	167.94444	208.00000
360	85	263.00000	196.50000	213.88889	166.38889	209.94444
370	86	246.94444	196.50000	216.05556	165.83333	206.33333
380	87	239.50000	197.55556	211.11111	161.83333	202.50000
390	88	253.27778	205.72222	204.61111	171.77778	208.84722
400	89	254.16667	200.55556	205.05556	160.94444	205.18056
410	90	260.77778	191.16667	213.61111	165.00000	207.63889
420	91	267.55556	197.83333	217.94444	166.16667	212.37500
430	92	251.05556	203.55556	211.83333	158.72222	206.29167
440	93	258.00000	199.38889	210.44444	162.38889	207.55556
450	94	259.05556	201.55556	208.77778	165.00000	208.59722
460	95	258.33333	195.61111	211.05556	167.50000	208.12500
470	96	265.44444	200.44444	204.33333	162.44444	208.16667
480	97	240.77778	196.16667	210.55556	165.16667	203.16667
490	98	258.05556	202.94444	213.05556	165.44444	209.87500
500	99	258.38889	197.50000	204.88889	164.05556	206.20833
510	100	267.66667	192.00000	209.50000	166.11111	208.81944
520	101	263.61111	201.88889	218.00000	171.05556	213.63889
530	102	258.88889	198.27778	211.77778	168.88889	209.45833
540	103	251.00000	196.61111	210.55556	162.22222	205.09722
550	104	264.50000	193.88889	217.00000	162.83333	209.55556
560	105	263.27778	199.11111	195.61111	163.27778	205.31944
570	106	249.27778	195.44444	218.94444	166.50000	207.54167
580	107	271.44444	196.83333	211.94444	166.55556	211.69444
590	108	263.22222	195.50000	210.55556	162.83333	208.02778
600	109	258.11111	208.94444	207.94444	163.11111	209.52778
610	110	252.50000	201.66667	221.94444	172.77778	212.22222
620	111	270.22222	216.11111	205.66667	159.38889	212.84722
630	112	258.88889	203.33333	225.66667	165.44444	213.33333
640	113	267.27778	203.16667	212.16667	164.61111	211.80556
650	114	259.66667	205.72222	220.05556	168.72222	213.54167
660	115	273.27778	206.05556	225.77778	167.38889	218.12500
670	116	253.11111	197.55556	213.38889	163.11111	206.79167
680	117	249.55556	198.88889	209.33333	169.16667	206.73611
690	118	249.11111	195.38889	211.50000	165.22222	205.30556
700	119	246.22222	199.27778	211.50000	166.88889	205.97222

710	120	253.55556	199.94444	213.22222	165.11111	207.95833
720	121	267.33333	194.77778	205.00000	161.72222	207.20833
730	122	246.44444	195.88889	217.61111	167.77778	206.93056
740	123	268.38889	200.94444	210.88889	158.94444	209.79167
750	124	266.16667	191.27778	201.88889	165.83333	206.29167
760	125	268.27778	190.27778	208.05556	166.38889	208.25000
770	126	263.77778	203.55556	224.22222	167.11111	214.66667
780	127	261.61111	196.88889	210.66667	163.88889	208.26389
800	128	256.05556	202.16667	214.72222	167.55556	210.12500
810	129	251.61111	200.83333	209.50000	166.66667	207.15278
820	130	258.16667	200.44444	210.11111	171.16667	209.97222
830	131	256.33333	204.72222	214.77778	171.50000	211.83333
840	132	248.66667	198.61111	218.61111	167.33333	208.30556
850	133	253.77778	199.83333	212.50000	161.27778	206.84722
860	134	263.22222	203.05556	219.66667	165.05556	212.75000
870	135	253.50000	202.55556	204.16667	160.38889	205.15278
880	136	275.33333	195.88889	213.22222	164.50000	212.23611
890	137	263.88889	195.50000	218.94444	168.50000	211.70833
900	138	275.55556	203.05556	231.72222	170.33333	220.16667
910	139	270.88889	197.27778	200.22222	159.61111	207.00000
920	140	245.61111	197.50000	208.66667	170.77778	205.63889
930	141	272.22222	206.11111	220.61111	166.38889	216.33333
940	142	247.33333	197.38889	209.77778	164.77778	204.81944
950	143	260.61111	203.33333	197.77778	166.00000	206.93056
960	144	260.72222	197.55556	215.83333	165.05556	209.79167
970	145	260.44444	200.72222	213.77778	162.94444	209.47222
980	146	255.05556	194.16667	209.66667	167.50000	206.59722
990	147	252.33333	196.27778	203.11111	170.16667	205.47222
1000	148	272.50000	196.16667	214.00000	165.22222	211.97222
1010	149	251.55556	192.00000	222.61111	161.88889	207.01389
1020	150	259.11111	193.38889	206.27778	166.72222	206.37500
1030	151	269.66667	201.66667	205.22222	167.94444	211.12500
1040	152	244.00000	195.44444	208.22222	164.44444	203.02778
1050	153	271.05556	202.44444	205.33333	166.16667	211.25000
1060	154	256.27778	193.83333	205.66667	167.66667	205.86111
1070	155	262.05556	199.83333	207.50000	164.27778	208.41667
1080	156	248.00000	192.38889	210.61111	164.16667	203.79167
1090	157	257.66667	205.72222	221.00000	170.50000	213.72222
MARGINAL		259.24770	199.15534	212.20559	165.79016	209.09970
SUBJECTS		9	9	9	9	36

STANDARD DEVIATIONS FOR OUTPUT LATENCIES FOR CORRECT NEGATIVE RESPONSES

GROUP =	NONE	VISUAL	AUDITORY	AUDITORY & VISUAL
INTERRUPTION STIMULUS ONSET TIME				
-500	1	140.57494	46.75787	93.10478	32.63338
SOA-490	2	132.72476	56.68394	73.60537	35.39077
-480	3	128.53131	57.14935	69.09866	35.19766
-470	4	126.68492	53.17313	73.48857	34.23367
-460	5	134.20765	59.50683	95.74347	29.56220
-450	6	119.14743	43.12120	72.82418	34.96228
-440	7	133.81753	53.88645	104.73926	32.68643
-430	8	142.29920	64.12899	82.05486	32.69057
-420	9	159.96786	55.08995	63.76999	36.12651
-410	10	131.77443	63.20601	68.48986	39.87803
-400	11	133.17986	45.98467	83.90202	35.82073
-390	12	122.79480	50.54515	85.53837	31.96167
-380	13	151.22810	53.64143	94.50132	28.61320
-370	14	138.68101	59.08950	91.51195	34.09158
-360	15	130.02091	54.76947	85.89302	41.20073
-350	16	137.71879	56.16438	95.34969	38.08871
-340	17	124.89996	45.52960	87.66770	34.62608
-330	18	138.07941	53.93225	80.48011	35.91135
-320	19	163.94818	60.14035	64.54138	35.64407
-310	20	119.60850	54.05540	59.98999	34.76958
-300	21	141.30024	62.91534	96.09959	33.17515
-290	22	134.07437	44.06830	67.21876	34.17916
-280	23	142.94754	47.69893	81.50460	34.67688
-270	24	121.60078	51.78287	102.88768	34.82436
-260	25	132.28822	66.83609	90.56033	36.32703
-250	26	134.77847	55.31695	69.33073	40.79752
-240	27	139.50179	60.54205	78.13530	33.68337
-230	28	150.26631	53.28878	96.19093	40.10672
-220	29	123.41954	48.38977	89.53332	32.11514
-200	30	129.75412	54.41335	81.54093	35.35622
-190	31	140.83770	57.18665	87.04780	36.84493
-180	32	139.16951	50.16334	92.30840	32.35545
-170	33	121.10570	47.30075	83.26501	36.54620
-160	34	136.19861	54.38871	96.25974	44.33396
-150	35	120.46951	55.84378	70.32025	32.84718
-140	36	127.89517	51.43631	88.66511	36.07814
-130	37	160.01929	49.93609	78.14974	35.09897
-120	38	125.66239	54.92691	96.84054	32.43369
-110	39	139.53683	64.77992	71.19301	35.39754
-100	40	143.11856	49.65555	77.14345	36.03047
-90	41	123.98323	51.44624	73.35947	36.07717
-80	42	132.48042	49.82595	75.01616	36.89380
-70	43	144.32308	36.65047	83.08429	33.64191
-60	44	136.03584	51.36194	108.39655	40.53813
-50	45	132.43885	57.31928	81.11211	36.56074
-40	46	134.04938	50.58148	98.81078	41.03970
-30	47	143.47679	55.70514	74.07344	36.57783
-20	48	137.55214	55.16100	86.14962	35.54643
-10	49	142.68689	49.84107	86.48017	33.76029
0	50	135.51499	58.81226	79.75549	38.78386
10	51	139.91741	61.05223	73.79904	34.45629
20	52	142.95566	50.29420	79.42034	32.83682
30	53	131.39249	45.34964	71.57470	41.69591
40	54	141.95468	60.31635	71.40894	36.29719
50	55	134.88259	58.13639	83.08659	36.90867
60	56	138.01625	52.73407	114.75490	36.36543
70	57	131.93696	58.94018	79.91445	36.16004

80	58	147.15237	56.63191	74.51431	34.60562
90	59	143.66978	58.19871	68.73545	34.86223
100	60	127.67219	55.28644	85.34639	31.85754
110	61	127.80660	60.73445	108.94351	37.19440
120	62	151.73188	56.71750	87.30640	35.74806
130	63	124.15517	55.22171	110.39361	33.68141
140	64	133.84905	56.80889	83.65036	34.61314
150	65	143.04467	56.55473	87.60886	38.13327
160	66	140.88222	60.94334	63.03130	34.90115
170	67	123.38045	61.62053	65.78231	35.71774
180	68	143.44925	58.96544	85.67052	34.70231
190	69	143.19131	62.87537	67.37488	36.31154
200	70	151.00113	63.86254	82.60452	34.12029
220	71	146.50912	56.99458	59.51004	35.77748
230	72	131.27502	64.54881	86.40292	35.55170
240	73	134.59510	48.23042	81.12914	36.14852
250	74	141.56796	51.03498	69.44652	36.17492
260	75	116.38084	49.39889	104.61749	36.77975
270	76	155.13639	63.51728	56.69497	31.19896
280	77	120.27884	52.80612	97.95326	34.91329
290	78	133.48301	48.57404	76.92953	35.70102
300	79	138.61625	65.24910	76.30736	31.32890
310	80	130.26823	41.92412	59.65054	35.29322
320	81	141.49867	45.97607	77.71319	35.30827
330	82	138.95978	62.24604	65.78205	38.67986
340	83	142.10845	59.01112	66.08128	34.03562
350	84	127.47364	56.68137	90.28962	34.50493
360	85	146.23889	50.04623	90.09016	35.77253
370	86	129.44556	55.90002	91.92029	31.09059
380	87	112.98119	59.94448	86.75676	31.92961
390	88	126.12397	52.45957	65.80595	40.09373
400	89	131.55370	54.96956	70.89316	33.60008
410	90	137.31581	55.84297	88.61002	38.35688
420	91	136.15466	52.02764	93.64943	29.98750
430	92	117.57456	68.52027	105.44993	33.17389
440	93	132.90434	46.33963	85.98817	31.42131
450	94	128.10700	67.56638	80.44140	37.35388
460	95	144.37170	54.26542	74.87925	41.24545
470	96	133.23298	56.50522	60.56195	34.26409
480	97	112.47864	51.34199	98.41254	35.03570
490	98	140.42201	61.62459	88.14882	35.00754
500	99	143.99583	45.64674	65.00614	37.83719
510	100	156.42970	50.00500	75.46108	37.57724
520	101	138.72337	53.19058	81.33412	38.68175
530	102	129.35025	56.83665	78.28518	38.00722
540	103	129.89924	57.38182	70.25242	38.73073
550	104	141.22676	50.96370	83.43111	31.39964
560	105	137.83666	63.77783	50.48625	35.14089
570	106	124.58258	42.78321	92.97024	38.12152
580	107	150.42428	57.55704	89.59229	38.38819
590	108	131.26455	55.60576	59.56270	35.84864
600	109	131.33801	74.30782	82.49108	31.78913
610	110	131.80976	50.39407	95.70607	39.09133
620	111	153.61663	72.57271	91.62526	36.49382
630	112	131.70392	51.74758	108.27136	34.69100
640	113	138.42013	69.60065	99.45445	32.59005
650	114	131.18379	59.79032	103.81156	42.19457
660	115	131.54375	51.72973	79.93439	36.07178
670	116	133.65459	54.05289	91.70768	33.02913
680	117	127.65565	43.37039	66.68269	37.58158
690	118	135.62443	45.05051	84.00670	36.27078
700	119	125.31713	40.02430	79.81071	42.64225
710	120	145.53596	62.93024	88.11573	40.30414
720	121	146.47547	53.61693	73.24629	37.64647

730	122	129.35041	50.53327	104.56809	35.38813
740	123	141.56420	63.55138	75.24285	34.43331
750	124	144.92541	40.96577	59.22192	33.37945
760	125	144.76470	42.45741	68.63875	34.21511
770	126	148.38592	56.63559	104.84456	38.03763
780	127	133.48075	48.58805	59.99115	33.57992
800	128	142.25910	69.62623	70.56208	34.05551
810	129	125.52634	59.54148	79.20977	34.49728
820	130	133.67633	64.89195	79.24203	40.65557
830	131	137.04812	58.38617	100.99972	36.55903
840	132	122.49566	40.34986	94.28076	37.54081
850	133	132.98663	47.18448	88.50812	37.92106
860	134	130.63167	63.54007	94.90456	34.14715
870	135	132.55753	51.57788	95.66966	34.27351
880	136	148.18780	57.09738	76.63595	37.03630
890	137	144.89323	52.77961	79.45496	35.25621
900	138	125.49961	52.79349	91.21407	38.98958
910	139	162.11662	57.85710	58.48136	31.11248
920	140	122.80543	46.31212	90.85737	37.50259
930	141	147.39483	55.57303	90.53341	35.01051
940	142	135.58761	48.61313	73.54893	40.82593
950	143	137.42720	58.31381	74.01525	36.26034
960	144	134.75374	51.74906	83.01468	39.09399
970	145	155.31932	58.83829	79.14035	36.46955
980	146	139.72774	51.40221	82.09217	37.41657
990	147	143.64126	56.43033	72.52361	34.94102
1000	148	141.90159	58.34702	82.53408	34.64202
1010	149	133.20976	48.77435	107.98170	33.39141
1020	150	148.03099	48.51596	68.60717	35.49217
1030	151	140.65694	57.12596	69.18413	37.35509
1040	152	124.99325	49.01814	71.53238	35.41314
1050	153	149.68727	51.12206	66.76030	35.51408
1060	154	135.53669	52.06006	71.53277	35.36153
1070	155	135.37966	57.11502	68.51825	39.14166
1080	156	122.08859	52.34129	84.99440	39.83952
1090	157	137.15753	63.26043	87.19841	37.75166

MEAN INPUT LATENCIES FOR THE CORRECT MIXED RESPONSES

INTERRUPTION ONSET TIMES	GROUP = STIMULUS	NONE	VISUAL	AUDITORY	AUDITORY & VISUAL	MARGINAL
-500	1	406.66667	404.77778	383.00000	420.33333	403.69444
-490	2	376.94444	416.44444	419.00000	466.50000	419.72222
-480	3	387.66667	459.16667	426.77778	433.00000	426.65278
-470	4	417.11111	403.77778	412.94444	418.61111	413.11111
-460	5	424.44444	449.27778	449.61111	447.77778	442.77778
-450	6	427.22222	420.94444	445.66667	445.22222	434.76389
-440	7	413.55556	463.94444	407.83333	445.66667	432.75000
-430	8	432.05556	456.22222	452.83333	500.16667	472.81944
-420	9	534.72222	498.22222	477.38889	497.22222	501.88889
-410	10	449.55556	448.72222	453.55556	464.83333	454.16667
-400	11	408.00000	406.61111	400.61111	403.55556	404.69444
-390	12	425.38889	427.11111	442.50000	472.27778	441.81944
-380	13	392.38889	403.44444	425.61111	421.72222	410.79167
-370	14	412.05556	440.66667	443.05556	459.77778	438.88889
-360	15	361.44444	394.38889	424.05556	410.94444	397.70833
-350	16	397.88889	423.50000	408.77778	429.38889	414.88889
-340	17	388.27778	403.38889	414.44444	414.77778	405.22222
-330	18	488.94444	469.83333	470.94444	479.33333	477.26389
-320	19	417.88889	409.05556	453.66667	462.33333	435.73611
-310	20	411.83333	414.05556	433.44444	452.00000	427.83333
-300	21	345.44444	401.94444	391.66667	431.05556	392.52778
-290	22	389.77778	412.61111	414.22222	441.33333	414.48611
-280	23	400.94444	405.88889	433.50000	457.55556	424.47222
-270	24	386.27778	397.00000	422.16667	416.00000	405.36111
-260	25	422.83333	409.50000	412.61111	430.05556	418.75000
-250	26	446.05556	442.00000	454.55556	490.22222	458.70833
-240	27	425.27778	435.44444	432.77778	457.83333	437.83333
-230	28	405.94444	398.05556	403.11111	433.55556	410.16667
-220	29	411.88889	403.83333	432.94444	439.00000	421.91667
-210	30	404.05556	457.50000	443.11111	423.50000	432.04167
-200	31	430.94444	510.27778	451.33333	464.05556	464.15278
-190	32	450.88889	472.88889	408.66667	441.61111	443.51389
-170	33	399.72222	405.44444	436.94444	452.11111	423.55556
-160	34	400.11111	415.61111	434.72222	426.77778	419.30556
-150	35	509.05556	448.55556	476.88889	498.38889	483.22222
-140	36	389.16667	438.16667	408.33333	452.33333	422.00000
-130	37	418.61111	444.88889	460.83333	464.77778	447.27778
-120	38	410.11111	412.33333	431.72222	425.88889	420.01389
-110	39	418.05556	453.83333	427.61111	455.11111	438.65278
-100	40	436.61111	417.22222	462.16667	453.77778	442.44444
-90	41	469.00000	452.55556	475.77778	463.72222	465.26389
-80	42	410.55556	439.72222	450.44444	429.55556	432.56944
-70	43	440.77778	437.72222	453.77778	476.61111	452.22222
-60	44	418.61111	473.33333	415.00000	462.55556	442.37500
-50	45	382.44444	424.27778	463.61111	432.94444	425.81944
-40	46	394.61111	459.83333	441.16667	471.50000	441.77778
-30	47	405.22222	469.77778	449.22222	452.66667	444.22222
-20	48	405.88889	456.33333	440.44444	454.22222	439.22222
-10	49	461.94444	515.22222	470.83333	447.05556	473.76389
0	50	423.22222	475.88889	476.94444	482.00000	464.51389
10	51	456.16667	447.66667	424.55556	488.05556	454.11111
20	52	382.94444	440.72222	402.77778	457.55556	421.00000
30	53	491.94444	513.44444	478.77778	485.66667	492.45833
40	54	424.61111	403.44511	400.55556	475.38889	426.00017
50	55	417.27778	461.72222	431.33333	463.83333	443.54167
60	56	428.44444	444.72222	473.33333	490.88889	459.34722
70	57	410.33333	479.22222	468.44444	469.61111	456.90278

80	58	473.77778	511.11111	467.05556	502.77778	488.68056
90	59	419.05556	480.55556	439.94444	482.83333	455.59722
100	60	409.66667	467.66667	406.44444	451.77778	433.88889
110	61	406.61111	455.83333	438.27778	499.16667	449.97222
120	62	412.94444	499.83333	416.16667	463.66667	448.15278
130	63	445.33333	508.27778	469.00000	498.55556	480.29167
140	64	422.94444	479.11111	456.77778	506.50000	466.33333
150	65	421.55556	463.77778	421.72222	489.66667	449.18056
160	66	339.94444	437.50000	416.88889	459.16667	413.37500
170	67	465.38889	472.00000	469.61111	469.94444	469.23611
180	68	377.66667	465.72222	417.83333	448.16667	427.34722
190	69	422.77778	466.44444	482.27778	482.00000	463.37500
200	70	429.66667	489.94444	445.55556	488.66667	463.45833
210	71	406.27778	530.27778	469.33333	483.22222	472.27778
220	72	374.44444	470.22222	403.88889	501.33333	437.47222
230	73	391.27778	507.16667	431.94444	465.55556	448.98611
240	74	381.27778	488.16667	480.94444	469.88889	455.06944
250	75	493.50000	511.55556	488.66667	516.83333	502.63889
260	76	388.16667	497.77778	459.94444	486.27778	458.04167
270	77	449.22222	505.88889	461.27778	515.66667	483.01389
280	78	450.33333	513.11111	464.83333	504.94444	483.30556
290	79	546.50000	605.22222	519.66667	589.22222	565.15278
300	80	393.77778	499.00000	443.77778	469.16667	451.43056
310	81	403.94444	511.83333	453.50000	481.33333	462.65278
320	82	410.94444	483.83333	445.11111	469.55556	452.36111
330	83	444.55556	527.50000	483.72222	553.88889	502.41667
340	84	413.44444	484.88889	422.00000	446.16667	441.62500
350	85	437.16667	531.27778	475.05556	503.94444	486.86111
360	86	470.22222	466.22222	481.11111	454.55556	468.02778
370	87	363.27778	463.44444	395.94444	445.22222	416.97222
380	88	420.72222	453.55556	417.22222	477.61111	442.27778
390	89	427.05556	471.22222	444.33333	469.05556	452.91667
400	90	414.55556	505.66667	463.94444	503.05556	471.80556
410	91	419.55556	511.72222	433.33333	514.16667	469.69444
420	92	399.11111	504.38889	433.88889	471.11111	452.12500
430	93	376.83333	477.16667	417.55556	456.16667	431.93056
440	94	402.88889	471.38889	411.27778	478.16667	440.93056
450	95	437.72222	492.83333	489.72222	492.61111	478.22222
460	96	405.61111	496.27778	488.66667	477.05556	466.90278
470	97	419.61111	488.66667	463.33333	500.05556	467.91667
480	98	365.11111	489.00000	387.77778	439.00000	420.22222
490	99	442.66667	474.11111	462.22222	487.44444	466.61111
500	100	419.38889	509.22222	450.94444	472.44444	463.00000
510	101	403.94444	463.33333	404.88889	458.94444	432.77778
520	102	422.72222	482.61111	469.05556	494.50000	467.22222
530	103	395.94444	495.05556	451.44444	478.05556	455.12500
540	104	437.72222	511.38889	474.72222	502.16667	481.50000
550	105	461.61111	498.72222	479.27778	502.83333	485.61111
560	106	434.00000	478.27778	441.55556	467.16667	455.25000
570	107	440.16667	513.11111	443.61111	473.77778	467.66667
580	108	435.38889	484.11111	431.33333	511.00000	465.45833
590	109	484.50000	501.55556	451.61111	485.55556	480.80556
600	110	359.94444	442.61111	402.88889	431.61111	409.26389
610	111	473.50000	523.50000	469.77778	505.72222	493.12500
620	112	387.50000	456.22222	410.22222	438.94444	423.22222
630	113	415.38889	483.00000	444.38889	463.44444	451.55556
640	114	450.50000	483.38889	508.77778	487.16667	482.45833
650	115	486.61111	638.16667	564.66667	580.11111	567.88889
660	116	461.11111	512.72222	460.88889	483.66667	479.59722
670	117	415.05556	464.77778	463.11111	491.22222	463.54167
680	118	402.05556	499.11111	429.77778	463.38889	448.58333
690	119	595.11111	664.05556	579.33333	613.38889	612.97222
700	120	398.33333	516.11111	426.83333	479.27778	454.88889
710	121	466.05556	509.44444	484.55556	530.05556	498.15278

720	122	461.77778	476.44444	417.05556	472.27778	456.88889
730	123	417.27778	485.16667	428.16667	475.05556	451.41667
740	124	430.22222	476.16667	457.50000	469.50000	458.34722
750	125	406.05556	486.83333	473.22222	485.88889	463.00000
760	126	479.83333	503.72222	477.55556	483.00000	486.02778
770	127	235.44444	437.38889	408.83333	427.94444	389.90278
780	128	408.05556	470.72222	427.05556	476.16667	445.50000
790	129	511.05556	549.33333	526.50000	506.16667	523.26389
800	130	345.88889	440.16667	437.50000	442.66667	416.55556
810	131	445.16667	460.77778	440.22222	463.55556	452.43056
820	132	394.11111	478.38889	419.27778	456.16667	436.98611
830	133	425.88889	504.00000	450.88889	493.05556	468.45833
840	134	452.44444	492.00000	443.72222	471.83333	465.00000
850	135	422.77778	501.83333	436.22222	488.61111	462.36111
860	136	418.22222	474.77778	452.61111	485.66667	457.81944
870	137	401.44444	469.05556	464.16667	481.50000	454.04167
880	138	436.00000	500.72222	486.61111	499.27778	480.65278
900	139	365.16667	481.00000	419.50000	453.27778	429.73611
910	140	456.66667	492.00000	463.50000	482.44444	473.65278
920	141	399.94444	510.27778	399.94444	466.22222	444.09722
930	142	419.83333	493.50000	442.55556	463.66667	454.88889
940	143	363.55556	440.66667	411.72222	445.77778	415.43056
950	144	400.94444	464.72222	427.05556	475.22222	441.98611
960	145	378.22222	477.27778	414.77778	455.05556	431.33333
970	146	376.72222	471.94444	426.50000	463.38889	434.63889
980	147	402.72222	501.33333	447.44444	460.94444	453.11111
990	148	421.77778	457.22222	434.88889	458.55556	443.11111
1000	149	375.88889	466.16667	431.38889	473.11111	437.13889
1010	150	482.77778	469.27778	450.22222	471.44444	468.43056
1020	151	446.88889	534.05556	482.00000	488.38889	488.33333
1030	152	394.88889	462.61111	490.66667	459.61111	451.94444
1040	153	371.50000	452.83333	403.94444	459.72222	422.00000
1050	154	447.11111	509.55556	450.11111	466.22222	468.25000
1060	155	424.72222	510.83333	463.94444	504.50000	476.00000
1070	156	429.94444	497.94444	475.72222	488.83333	473.11111
1080	157	467.11111	489.27778	450.00000	517.83333	481.05556
1090	158	434.50000	477.55556	436.94444	482.16667	457.79167
MARGINAL		421.54466	472.42968	445.30239	471.50352	452.69506
SUBJECTS		9	9	9	9	36

STANDARD DEVIATIONS FOR THE INPUT LATENCIES FOR THE CORRECT MIXED RESPONSES

GROUP =	NONE	VISUAL	AUDITORY	AUDITORY & VISUAL
INTERRUPTION STIMULUS ONSET TIMES				
-500	1	142.94077	153.63006	133.52364	110.36190
-490	2	129.51676	158.18886	129.36504	122.62519
-480	3	130.86372	145.56893	124.53667	115.98491
-470	4	98.10861	129.08382	144.48928	107.28839
-460	5	117.50544	153.64409	161.55529	99.79326
-450	6	100.94697	144.28021	107.04000	120.21416
-440	7	123.17352	185.67974	123.50759	111.26798
-430	8	129.07300	150.77345	141.91613	141.38600
-420	9	179.30301	115.23810	169.14228	158.82914
-410	10	87.00411	140.76068	123.93356	136.47527
-400	11	94.23640	158.79208	125.10940	97.33783
-390	12	121.37282	172.56281	130.81858	129.42665
-380	13	133.92927	142.45097	132.09863	107.31994
-370	14	146.34771	148.76870	164.54852	113.74646
-360	15	160.42472	118.86699	91.16929	88.32307
-350	16	100.40349	176.73868	134.12287	116.46506
-340	17	159.07292	133.79620	143.09010	103.67350
-330	18	95.73252	136.49611	147.79197	95.15908
-320	19	130.36554	129.78214	147.00829	126.04835
-310	20	102.22708	148.20097	118.61241	107.87174
-300	21	154.61190	164.19947	150.54215	116.28721
-290	22	135.48665	145.38651	123.77604	90.88695
-280	23	131.21558	149.70132	147.32044	109.41048
-270	24	127.81337	144.70142	175.59631	108.09747
-260	25	131.50238	127.90108	120.57539	107.77623
-250	26	83.49455	159.09667	159.40366	108.19603
-240	27	103.30510	157.92709	135.01646	130.60747
-230	28	111.55364	140.67726	134.77917	116.17805
-220	29	109.27882	129.09033	141.46873	107.72506
-210	30	128.61096	161.95042	139.70612	78.23243
-200	31	120.37012	206.02580	181.56455	114.74059
-190	32	109.13346	179.97253	132.47500	110.14473
-170	33	132.42760	172.34095	155.17479	113.78977
-160	34	118.75968	175.05120	152.52994	101.59605
-150	35	97.61162	163.69449	158.95868	118.97342
-140	36	161.42974	200.98647	126.12940	127.18687
-130	37	111.36056	176.45976	135.33454	131.81453
-120	38	128.80964	126.29974	153.49310	110.74288
-110	39	124.73583	174.20462	171.09222	133.33482
-100	40	130.46115	161.92979	179.68288	107.93925
-90	41	99.65158	125.11481	147.81473	144.98149
-80	42	91.56127	170.33242	152.30222	120.17395
-70	43	84.56104	144.58024	159.96838	93.78825
-60	44	93.16778	195.87560	172.58186	106.27307
-50	45	139.85315	181.69880	193.29750	89.18431
-40	46	109.19243	180.75985	147.17252	127.27087
-30	47	154.18396	129.65606	148.30566	107.41886
-20	48	147.91822	177.23519	119.34730	111.01214
-10	49	110.13073	240.10221	171.65445	109.46331
0	50	108.17322	146.08362	202.60297	112.02901
10	51	96.06020	185.38018	129.18046	90.11189
20	52	142.04938	171.39175	132.31452	119.42556
30	53	81.72455	176.56363	156.41693	109.17961
40	54	79.31495	302.72353	129.32903	101.15359
50	55	113.48599	161.05708	167.75251	94.51885
60	56	116.22673	170.49452	174.25825	123.68478

70	57	116.07191	167.25862	132.12481	105.58314
80	58	119.02497	174.62778	156.86225	113.75058
90	59	139.00482	207.94282	140.48742	104.59804
100	60	97.85704	176.50726	117.32073	121.67223
110	61	105.73693	131.87897	118.45044	122.29217
120	62	111.97361	142.11769	120.68010	104.61985
130	63	111.74748	191.17043	161.55436	104.57248
140	64	128.87262	130.16211	124.84368	104.07149
150	65	119.19035	143.41049	126.78207	109.77819
160	66	138.19991	159.06602	122.17323	98.09148
170	67	79.95732	126.55384	155.83380	110.98914
180	68	124.06929	165.47736	119.31654	111.66748
190	69	133.66238	155.38590	209.38170	119.27568
200	70	115.32779	187.54474	126.00383	126.91853
210	71	132.55898	235.95737	161.57351	99.85900
220	72	158.16456	173.44742	123.34879	143.75609
230	73	118.78187	159.84133	146.34237	118.36581
240	74	131.27883	209.02811	179.64382	102.26032
250	75	124.70240	175.64407	147.85825	110.97635
260	76	132.53396	151.68514	127.12210	94.12595
270	77	90.16932	125.64951	136.61445	135.82641
280	78	97.57913	201.83437	139.89081	177.92088
290	79	122.40915	257.94017	196.60414	126.13364
300	80	95.97660	201.00311	145.89789	129.52244
310	81	130.51136	194.45420	121.66321	94.94110
320	82	145.84398	176.12336	147.54634	91.54898
330	83	110.71090	152.43175	220.46472	133.47045
340	84	113.67070	164.60934	134.57131	83.66600
350	85	120.83098	141.43044	145.37268	133.04169
360	86	123.07470	154.62800	179.01829	102.81398
370	87	142.79117	173.93487	129.47091	70.92078
380	88	119.93439	154.35864	138.39326	93.82223
390	89	96.49367	172.60035	135.94783	109.78429
400	90	121.52403	194.60698	124.18294	129.32480
410	91	101.98206	186.06923	131.61806	140.76865
420	92	113.05606	208.65503	132.58318	95.90841
430	93	103.60080	189.55375	123.24961	80.47981
440	94	107.56939	191.77962	167.09917	120.81313
450	95	130.67639	163.87438	159.93341	102.68817
460	96	111.80166	167.17713	164.48233	96.75434
470	97	98.65811	159.90173	150.42066	135.14817
480	98	135.43443	218.33375	122.40892	95.42864
490	99	137.21106	156.12290	166.16259	132.38874
500	100	114.92464	183.06370	141.36709	110.63240
510	101	137.32727	206.12754	149.53319	66.83957
520	102	140.84458	190.38132	152.23942	120.39726
530	103	130.34844	230.95893	149.85586	94.23125
540	104	102.71657	259.73806	192.80011	115.79616
550	105	110.44308	187.03795	144.62670	144.46583
560	106	114.47898	167.39782	158.33794	129.93628
570	107	125.53486	156.73201	150.34809	93.58690
580	108	110.82553	231.56813	126.18959	116.19058
590	109	127.20800	181.43567	164.66154	145.32989
600	110	140.00144	166.24996	108.48121	84.12668
610	111	124.60613	186.46743	155.74661	114.68847
620	112	137.32512	143.95097	161.28645	63.30356
630	113	115.97839	200.84602	148.94961	116.10002
640	114	98.84489	157.92023	182.95169	113.29331
650	115	108.63349	234.29935	219.89458	136.57250
660	116	112.29447	160.30393	146.44619	121.54757
670	117	112.50623	169.11222	179.90671	137.52116
680	118	111.48723	212.70443	129.96493	89.99541
690	119	71.45225	197.39055	219.90495	143.24188
700	120	116.76392	229.15889	107.95833	148.54505

710	121	115.01507	240.51955	146.01829	241.17181
720	122	70.12316	213.13969	163.33850	118.79371
730	123	107.37263	195.10318	141.07024	119.60859
740	124	105.22657	148.18738	111.07964	83.05909
750	125	124.93009	183.49642	143.27904	117.46611
760	126	101.82798	215.38093	142.20264	110.11925
770	127	172.00644	186.55056	107.08174	86.91355
780	128	133.56470	167.09505	118.63691	131.15568
790	129	143.41471	245.58934	175.16778	145.43684
800	130	134.92771	159.24392	148.12305	84.32823
810	131	92.05162	152.29846	110.75737	95.01462
820	132	115.01244	190.35030	141.48059	113.94050
830	133	113.82080	189.75527	128.97790	119.63054
840	134	132.85741	157.42339	146.22930	104.27368
850	135	119.78160	193.54360	130.40948	124.38594
860	136	76.41462	205.22124	186.01256	128.15469
870	137	121.64617	148.63850	144.23787	129.31961
880	138	138.22559	148.27089	190.12936	102.98517
900	139	151.91136	178.49860	126.13361	94.69296
910	140	111.61961	137.88605	183.98828	113.14467
920	141	129.93783	181.21553	114.06863	113.12496
930	142	114.43120	182.00412	126.84007	105.69886
940	143	142.58297	174.62084	105.05359	119.38282
950	144	150.98850	160.65513	154.59614	96.76199
960	145	119.86409	173.96661	153.87091	97.21511
970	146	132.04855	168.34757	105.66279	98.11561
980	147	126.55782	222.14030	166.23317	113.76056
990	148	126.12893	155.77851	123.24690	118.66930
1000	149	126.41197	183.36013	161.89769	100.33032
1010	150	107.30043	186.71521	165.69062	88.02395
1020	151	111.88213	151.87710	165.19137	110.80269
1030	152	126.55478	174.23741	240.62782	103.17091
1040	153	135.00463	171.95730	147.37822	106.80154
1050	154	135.31301	221.01632	122.47724	138.20232
1060	155	115.23484	171.85623	149.54064	137.12608
1070	156	146.11820	230.47254	193.90689	141.81414
1080	157	114.64423	140.52136	202.81149	115.80263
1090	158	109.93805	115.13781	141.82349	96.84298

MEAN OUTPUT LATENCIES FOR THE CORRECT MIXED RESPONSES

GROUP =		NONE	VISUAL	AUDITORY	AUDITORY & VISUAL	MARGINAL
INTERRUPTION STIMULUS ONSET TIME						
-500	1	270.61111	200.11111	231.83333	167.11111	217.41667
-490	2	256.00000	167.83333	207.05556	139.27778	193.04167
-480	3	273.88889	180.11111	205.88889	148.11111	202.00000
-470	4	268.72222	193.00000	222.88889	153.27778	209.47222
-460	5	263.38889	183.33333	216.50000	152.50000	203.93056
-450	6	277.88889	192.27778	218.66667	144.61111	208.36111
-440	7	270.77778	176.44444	220.27778	149.55556	204.26389
-430	8	275.61111	196.94444	211.22222	152.22222	209.00000
-420	9	275.55556	173.38889	195.88889	144.05556	197.22222
-410	10	263.50000	194.50000	214.83333	154.72222	206.86889
-400	11	276.38889	180.94444	220.38889	158.05556	208.94444
-390	12	262.72222	185.83333	214.61111	146.33333	202.37500
-380	13	287.88889	175.27778	206.83333	143.11111	203.27778
-370	14	263.61111	177.55556	203.94444	138.16667	195.81944
-360	15	253.33333	175.77778	215.16667	159.88889	201.04167
-350	16	263.22222	163.16667	205.22222	141.88889	193.37500
-340	17	280.44444	176.77778	209.27778	152.22222	204.68056
-330	18	266.11111	180.94444	204.05556	146.88889	199.50000
-320	19	277.11111	211.88889	204.05556	146.44444	209.87500
-310	20	272.88889	175.38889	196.27778	146.44444	197.75000
-300	21	264.72222	180.72222	216.11111	142.77778	201.08333
-290	22	270.88889	185.16667	208.27778	140.55556	201.22222
-280	23	273.61111	194.94444	222.11111	149.16667	209.95833
-270	24	253.55556	168.72222	203.88889	140.94444	191.77778
-260	25	275.55556	180.55556	207.27778	152.50000	203.97222
-250	26	261.44444	188.44444	214.33333	151.55556	203.94444
-240	27	248.44444	181.61111	217.11111	147.66667	198.70833
-230	28	259.27778	173.77778	207.61111	146.88889	196.88889
-220	29	271.44444	189.05556	216.72222	149.72222	206.73611
-210	30	269.88889	182.00000	205.61111	150.05556	201.88889
-200	31	268.05556	176.66667	227.94444	145.77778	204.61111
-190	32	263.94444	193.22222	224.55556	154.88889	209.15278
-170	33	271.38889	182.72222	201.38889	142.61111	199.52778
-160	34	270.05556	186.38889	219.50000	162.38889	209.58333
-150	35	258.38889	189.50000	206.61111	143.27778	199.44444
-140	36	271.05556	184.22222	210.94444	145.27778	202.87500
-130	37	274.66667	171.72222	200.72222	155.61111	200.68056
-120	38	258.11111	175.50000	200.72222	155.27778	197.40278
-110	39	262.72222	171.44444	210.72222	142.00000	196.72222
-100	40	256.94444	180.88889	208.72222	148.38889	198.73611
-90	41	249.83333	197.33333	213.44444	166.11111	206.68056
-80	42	268.11111	178.05556	218.38889	158.83333	205.84722
-70	43	253.72222	184.00000	224.61111	145.33333	202.91667
-60	44	265.27778	192.50000	210.88889	139.38889	199.51389
-50	45	262.50000	173.27778	209.38889	139.77778	196.23611
-40	46	254.38889	176.61111	219.11111	145.88889	199.00000
-30	47	271.72222	183.83333	217.11111	147.72222	205.09722
-20	48	268.27778	190.50000	213.83333	150.27778	205.72222
-10	49	270.00000	191.00000	209.38889	156.16667	206.63889
0	50	261.00000	174.55556	216.27778	152.44444	201.06944
10	51	257.66667	180.11111	207.88889	149.11111	198.69444
20	52	264.61111	171.72222	213.94444	141.66667	197.98611
30	53	258.44444	184.94444	208.11111	146.05556	199.38889
40	54	268.33333	187.66667	221.72222	152.44444	207.54167
50	55	275.11111	184.55556	221.16667	142.11111	205.73611

60	56	252.72222	184.61111	206.72222	146.77778	197.70833
70	57	247.50000	184.33333	214.05556	149.66667	198.88889
80	58	259.38889	177.61111	218.05556	153.05556	202.02778
90	59	246.22222	168.38889	208.66667	136.38889	190.41667
100	60	257.11111	178.38889	212.72222	157.00000	201.30556
110	61	264.44444	179.61111	209.44444	158.50000	203.00000
120	62	278.83333	191.38889	219.16667	155.88889	211.31944
130	63	255.27778	184.94444	214.88889	157.16667	203.06944
140	64	260.27778	172.83333	205.66667	137.66667	194.11111
150	65	267.50000	190.16667	225.94444	147.00000	207.65278
160	66	277.27778	181.94444	215.44444	147.00000	205.41667
170	67	281.50000	199.83333	206.50000	172.16667	215.00000
180	68	293.50000	189.72222	216.05556	156.61111	213.97222
190	69	272.44444	177.55556	202.38889	151.88889	201.06944
200	70	252.77778	182.61111	219.33333	143.22222	199.48611
210	71	264.77778	170.66667	206.88889	136.22222	194.63889
220	72	270.11111	187.94444	215.16667	152.05556	206.31944
230	73	269.61111	179.38889	218.00000	142.88889	202.47222
240	74	285.83333	169.77778	201.88889	143.44444	200.23611
250	75	273.94444	182.00000	222.66667	153.55556	208.04167
260	76	263.94444	188.38889	196.83333	144.72222	198.47222
270	77	268.55556	183.61111	199.22222	144.16667	198.88889
280	78	262.83333	177.00000	199.72222	154.33333	198.47222
290	79	263.94444	205.27778	217.11111	145.11111	207.86111
300	80	267.27778	191.00000	218.94444	156.77778	208.50000
310	81	263.94444	181.27778	202.22222	150.44444	199.47222
320	82	260.83333	182.44444	213.94444	151.05556	202.06944
330	83	284.05556	187.83333	215.77778	147.33333	208.75000
340	84	271.66667	175.27778	212.88889	159.66667	204.87500
350	85	280.50000	169.94444	216.22222	150.94444	204.40278
360	86	263.94444	187.44444	210.00000	159.72222	205.27778
370	87	265.16667	186.27778	207.88889	142.88889	200.55556
380	88	248.77778	177.55556	224.05556	153.50000	200.97222
390	89	265.61111	178.27778	203.83333	142.05556	197.44444
400	90	268.16667	206.22222	221.55556	156.55556	213.12500
410	91	247.05556	182.38889	203.16667	137.72222	192.58333
420	92	273.55556	173.27778	210.83333	143.33333	200.25000
430	93	265.50000	173.38889	203.50000	138.66667	195.26389
440	94	246.05556	180.83333	214.33333	150.50000	197.93056
450	95	255.88889	184.61111	206.72222	150.33333	199.38889
460	96	256.22222	183.22222	218.88889	152.77778	202.77778
470	97	272.94444	173.22222	202.44444	147.50000	199.02778
480	98	256.66667	192.72222	214.88889	142.72222	201.75000
490	99	256.22222	178.11111	214.05556	149.72222	199.52778
500	100	234.50000	193.22222	231.77778	166.27778	218.94444
510	101	260.72222	174.83333	219.16667	138.38889	198.27778
520	102	259.05556	192.16667	207.33333	145.05556	200.90278
530	103	261.22222	170.11111	197.83333	140.50000	192.41667
540	104	265.50000	186.66667	211.11111	145.38889	202.16667
550	105	269.27778	198.27778	215.50000	155.50000	209.63889
560	106	259.00000	184.38889	213.66667	146.33333	200.84722
570	107	266.77778	189.33333	218.05556	144.61111	205.19444
580	108	263.77778	192.05556	215.33333	143.50000	203.66667
590	109	264.50000	193.94444	217.50000	156.83333	208.19444
600	110	266.55556	182.50000	208.77778	156.16667	203.50000
610	111	263.33333	185.00000	206.72222	143.00000	199.63889
620	112	264.16667	177.72222	211.66667	150.77778	201.08333
630	113	269.50000	177.38889	202.72222	144.00000	198.40278
640	114	255.72222	185.50000	214.00000	151.22222	201.61111
650	115	265.05556	207.83333	227.16667	150.88889	212.73611
660	116	274.83333	191.77778	238.66667	160.16667	216.36111
670	117	261.00000	174.44444	209.72222	149.77778	198.73611
680	118	262.33333	186.33333	206.44444	151.22222	201.56333
690	119	262.44444	185.27778	221.72222	154.50000	205.98611

700	120	265.16667	175.16667	210.33333	162.00000	203.16667
710	121	277.83333	181.83333	205.61111	158.27778	205.88889
720	122	255.44444	183.55556	216.83333	145.00000	200.20833
730	123	270.00000	180.16667	221.38889	149.05556	205.15278
740	124	271.88889	171.27778	207.50000	144.50000	198.79167
750	125	262.72222	163.38889	205.00000	146.11111	194.30556
760	126	263.27778	203.05556	226.94444	172.05556	216.33333
770	127	262.33333	189.94444	206.66667	148.77778	201.93056
780	128	272.94444	178.83333	212.88889	152.44444	204.27778
790	129	273.11111	184.77778	213.61111	165.44444	209.23611
800	130	276.38889	184.22222	217.27778	154.22222	208.02778
810	131	270.83333	176.94444	200.55556	159.83333	202.04167
820	132	270.05556	181.72222	208.61111	143.83333	201.05556
830	133	280.61111	185.11111	217.77778	147.16667	207.66667
840	134	263.94444	193.27778	227.83333	162.22222	211.81944
850	135	257.66667	187.61111	207.00000	150.55556	200.70833
860	136	270.83333	185.55556	213.77778	157.55556	206.93056
870	137	259.50000	186.00000	201.61111	148.72222	198.95833
880	138	282.16667	184.05556	211.16667	148.66667	206.51389
890	139	274.00000	191.83333	231.00000	149.05556	211.47222
900	140	264.11111	169.72222	205.50000	153.72222	198.26389
910	141	268.27778	195.50000	222.00000	167.22222	213.25000
920	142	261.38889	170.22222	226.33333	148.94444	201.72222
930	143	260.33333	181.33333	214.27778	152.33333	202.06944
940	144	255.72222	182.88889	199.55556	146.27778	196.11111
950	145	274.44444	193.61111	218.44444	136.38889	205.72222
960	146	264.55556	178.94444	211.38889	138.72222	198.40278
970	147	268.22222	181.16667	208.72222	150.38889	202.12500
980	148	250.00000	167.50000	203.33333	148.50000	192.33333
990	149	265.77778	191.55556	212.94444	153.88889	206.04167
1000	150	258.77778	175.22222	210.00000	142.16667	196.54167
1010	151	265.27778	192.05556	215.16667	145.16667	204.41667
1020	152	279.11111	172.44444	204.88889	166.77778	205.80556
1030	153	266.88889	184.72222	200.66667	143.61111	198.97222
1040	154	273.16667	175.72222	222.55556	150.72222	205.54167
1050	155	267.55556	184.27778	210.66667	160.00000	205.62500
1060	156	257.11111	171.38889	217.44444	147.22222	198.29167
1070	157	266.33333	174.50000	205.77778	139.66667	196.56944
1080	158	255.44444	200.05556	229.27778	156.33333	210.27778
1090	159	272.83333	175.44444	203.50000	154.83333	201.65278
MARGINAL		266.00664	182.96960	212.51687	149.80363	202.82469
SUBJECTS		9	9	9	9	36

STANDARD DEVIATIONS FOR OUTPUT LATENCIES FOR CORRECT MIXED RESPONSES

GROUP =	NONE	VISUAL	AUDITORY	AUDITORY & VISUAL
INTERRUPTION STIMULUS ONSET TIMES				
-500	1	136.27242	68.55280	92.95126	49.44111
-490	2	153.77845	81.93176	89.06228	37.77326
-480	3	162.17097	69.74004	91.14850	46.15448
-470	4	129.50147	79.72178	104.66308	45.78012
-460	5	146.28264	58.63672	90.57835	51.82603
-450	6	155.14082	69.93305	101.34440	35.39313
-440	7	155.11329	83.58097	101.55051	47.93319
-430	8	151.12966	75.24603	99.43249	53.43110
-420	9	165.86920	71.33100	81.25184	48.89750
-410	10	141.52804	66.90151	91.18491	49.91124
-400	11	156.52092	74.88218	115.24018	44.79917
-390	12	152.07196	71.91618	84.73996	41.15899
-380	13	193.55987	83.17030	96.94328	43.74556
-370	14	149.16576	87.65324	88.46060	46.05160
-360	15	139.76051	81.65480	91.22294	52.13850
-350	16	138.05391	78.89194	91.25928	35.13081
-340	17	170.37540	62.75155	85.08566	55.16572
-330	18	134.97448	68.09573	84.83198	42.34514
-320	19	145.99717	63.52990	97.33879	53.63560
-310	20	158.54273	86.96795	84.96327	50.96165
-300	21	145.93002	89.31269	99.48423	39.60280
-290	22	134.10555	84.23442	88.67924	44.39485
-280	23	140.45056	80.73740	105.73338	39.80813
-270	24	155.62283	76.18896	87.80795	44.90785
-260	25	160.11021	82.13268	71.19213	46.50739
-250	26	143.50402	78.21622	96.49061	46.36974
-240	27	140.11991	69.74900	94.55712	46.15463
-230	28	155.11994	70.84230	95.50058	46.52001
-220	29	147.36677	81.38996	103.00914	42.62563
-210	30	151.43703	78.16689	86.54904	41.29577
-200	31	144.21066	76.02056	119.80934	43.15315
-190	32	124.41549	74.89831	98.90350	45.50465
-170	33	155.37229	86.61124	65.06188	36.45012
-160	34	155.29135	82.37179	111.28426	47.23530
-150	35	128.30744	83.22297	84.29701	47.73567
-140	36	152.18522	84.91470	93.88805	48.90431
-130	37	158.70629	91.95697	86.04981	53.45312
-120	38	137.93517	78.46138	91.54921	55.99169
-110	39	161.75041	82.37849	96.67604	49.80148
-100	40	166.41297	83.07706	74.06590	57.82397
-90	41	132.75942	56.95009	102.27855	53.19115
-80	42	146.07335	74.00948	91.59687	49.61540
-70	43	143.15772	68.65175	95.23319	44.32832
-60	44	144.74355	70.65984	97.36747	38.66343
-50	45	165.71587	88.07707	100.42683	44.87490
-40	46	153.52092	75.51026	113.49663	59.64519
-30	47	168.22773	67.65584	99.46506	39.26840
-20	48	162.93866	80.70791	88.88581	43.93611
-10	49	146.48827	79.37293	96.01620	52.47738
0	50	149.37704	79.87351	81.01740	46.24760
10	51	129.22147	76.66354	101.40475	45.60961
20	52	161.44712	78.73338	98.87380	51.47390
30	53	132.89362	89.14225	88.13937	46.38995
40	54	122.95197	76.54941	97.05382	48.09265
50	55	146.50614	86.49799	95.97819	42.02984
60	56	136.34976	84.31811	88.88198	49.16116
70	57	146.71592	76.21721	89.81315	42.44482

80	58	159.47194	76.24253	110.80090	54.81072
90	59	146.40101	81.08590	95.67752	45.74165
100	60	146.87001	85.30159	69.58275	52.99764
110	61	154.78765	84.44184	81.81780	53.89109
120	62	137.64106	88.46284	85.03455	44.92339
130	63	139.12250	80.09465	96.97963	47.64583
140	64	156.40295	73.79151	80.64002	49.97562
150	65	132.04261	76.27905	100.17873	42.17227
160	66	152.03415	66.31810	97.47867	42.60795
170	67	149.82969	81.75076	89.04107	72.31053
180	68	171.76219	70.39536	72.89438	48.96605
190	69	145.04298	74.93724	88.75696	47.39843
200	70	127.26771	82.36685	97.58458	40.51166
210	71	165.98044	80.97183	83.81556	40.11554
220	72	157.97958	79.56383	96.17757	48.62191
230	73	153.32131	83.24804	94.26028	41.41013
240	74	162.84694	87.51040	89.89152	52.49669
250	75	139.06438	84.93122	90.03159	42.18149
260	76	164.17396	79.67111	73.18384	45.38661
270	77	151.35336	81.05584	89.53076	46.70051
280	78	145.50279	81.28615	92.03468	48.31020
290	79	144.05304	65.19783	103.24025	45.40910
300	80	132.78557	77.57174	100.98312	41.70590
310	81	149.43382	83.59280	88.62001	42.77079
320	82	153.00327	80.83681	101.21711	52.12572
330	83	157.28148	88.22379	89.11163	44.15314
340	84	147.73900	87.58321	89.52506	47.46117
350	85	148.32186	66.63306	112.77054	42.81387
360	86	152.08148	82.84943	99.86366	53.66337
370	87	157.77258	79.99536	89.40385	41.62014
380	88	141.59937	75.78483	114.42204	56.66017
390	89	145.79454	75.67204	93.71099	41.76081
400	90	142.93989	75.18981	83.81693	42.85983
410	91	129.20827	84.88477	75.94653	51.89299
420	92	146.40770	87.02303	83.01205	46.13567
430	93	140.99712	87.84958	105.58942	41.84570
440	94	142.00142	78.17009	90.21641	40.55860
450	95	124.93443	83.94856	87.46182	46.18374
460	96	147.74051	74.12874	115.52537	55.14476
470	97	157.00069	84.20812	84.07491	44.51404
480	98	133.96898	87.58536	92.38161	34.88473
490	99	154.78435	80.70540	90.19785	42.67399
500	100	152.77373	80.20953	96.44497	52.07333
510	101	170.83419	82.73980	99.04639	37.76554
520	102	145.58212	70.04909	80.37101	42.42968
530	103	142.80277	86.95788	85.59899	44.00355
540	104	126.15937	82.52310	94.65621	52.52248
550	105	147.10946	71.27855	108.17578	49.27347
560	106	137.35197	77.43133	94.19428	47.75262
570	107	148.96520	67.53564	106.81949	40.65924
580	108	149.29713	85.90309	86.58919	48.28820
590	109	148.27719	64.62461	100.94429	43.77285
600	110	138.97312	89.11439	71.47907	45.82371
610	111	152.09536	86.16403	102.11517	33.40565
620	112	149.14150	73.57399	89.34169	43.77222
630	113	151.74403	91.01641	99.42432	40.98552
640	114	140.03149	78.69681	87.60458	44.06041
650	115	154.57066	92.11576	105.19684	38.27432
660	116	153.88571	76.54252	105.38679	45.94630
670	117	142.32731	73.97527	88.39298	40.29742
680	118	150.87205	88.48941	102.83617	52.80395
690	119	142.35507	89.34732	90.77965	58.05278
700	120	149.81655	83.03204	97.23393	61.59799
710	121	161.45955	77.93026	86.57106	59.98756

720	122	146.58561	89.36458	101.01949	45.01180
730	123	139.56405	90.28116	100.48656	45.49756
740	124	159.42568	71.41521	85.30753	49.07583
750	125	156.53356	81.21375	102.63923	42.07343
760	126	145.20505	66.70197	96.13709	49.86948
770	127	138.11205	96.12734	80.63072	45.39694
780	128	155.21083	90.76171	93.11209	44.49469
790	129	162.22915	75.52405	104.27571	50.41357
800	130	156.65144	86.41872	95.03293	44.39884
810	131	146.70591	85.97290	72.83047	44.71437
820	132	139.82588	82.74778	82.94681	40.38874
830	133	157.23465	75.55411	104.55594	47.54932
840	134	146.48431	75.84487	103.97355	45.52823
850	135	141.98922	79.81533	92.09811	37.91310
860	136	150.90788	78.39063	105.43307	44.75241
870	137	130.04254	86.45013	87.36124	42.09373
880	138	162.73829	90.85546	96.36292	48.86909
890	139	148.44022	72.95975	89.35533	41.18513
900	140	148.18965	69.11484	89.16032	44.67320
910	141	153.41062	59.21412	82.40677	57.40868
920	142	134.24390	80.68926	111.26124	54.37569
930	143	142.67730	84.03682	93.48500	47.08304
940	144	159.51491	87.12985	63.14984	45.13944
950	145	145.44489	93.27774	115.28320	31.91569
960	146	152.74661	84.58112	106.93099	43.48499
970	147	160.38082	79.42567	97.07636	41.43125
980	148	144.37992	80.34301	93.53041	47.13809
990	149	149.10359	80.70178	89.02368	49.97861
1000	150	157.13233	83.64513	90.76584	48.13523
1010	151	147.66667	80.44348	111.62521	50.31401
1020	152	168.59081	88.92815	71.18364	54.14051
1030	153	164.09121	80.01371	79.78839	46.18426
1040	154	155.05100	75.49549	121.26249	52.61660
1050	155	142.98196	96.92946	103.75904	42.39030
1060	156	150.54584	75.00782	110.69537	43.44545
1070	157	158.18857	86.70964	88.97089	39.85364
1080	158	139.58498	63.39827	121.86214	45.46221
1090	159	166.71833	76.82506	84.47522	48.27849